

FACILITIES ENGINEERING

FIRE

REGULATIONS

DEPARTMENT OF THE ARMY
HEADQUARTERS III CORPS AND FORT HOOD
Fort Hood, Texas 76544

FH REGULATION
NO. 420-1

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Facilities Engineering
FIRE REGULATIONS

Supplementation by subordinate headquarters is prohibited
unless approved by this headquarters.

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CHAPTER I

POLICY AND SCOPE

1-1. **PURPOSE AND SCOPE.** This regulation applies to all persons and activities on the Fort Hood Military Reservation. The intent is:

a. To provide safeguards designed for minimum interference with operations, yet provide maximum protection against injury to the individual, both from his own acts and those of others.

b. To prevent loss of property by fire.

c. To provide a basis for control and discipline of the irresponsible, negligent, and heedless minority.

1-2. **POLICY.** The Department of the Army policy for reduction of loss from fire requires that any person directly or indirectly responsible for a fire will be punished and may be required to reimburse the Government for the property destroyed. This policy is being implemented through a program designed for:

a. Prevention of fires.

b. Thorough investigation of fires as they occur to fix the responsibility and take any measures possible to recover the loss and punish the persons responsible.

1-3. **CODE AND STANDARDS.** This regulation adopts and includes the provisions of current known and accepted codes, regulations, and standards whether or not specifically mentioned, and these are equally effective with the stipulations herein, except that in case of conflict, the more restrictive regulation will apply pending review and issuance of a written decision by the Fire Marshal. National Fire Protection Association, (NFPA) AR 420-90, Fire Protection and Prevention, FORSCOM Regulation 420-24, Fire Prevention and Protection.

1-4. **REVIEW AND REVISION.**

a. Personnel directly concerned with fire prevention and protection activities are specifically charged with continuing review of this regulation for improvement, clarification, and expansion. All other personnel are encouraged to submit suggestions for improvement. Such suggestions may be submitted through the Incentive Awards Program.

b. Changes to this regulation will be published as page changes.

1-5. **IMPLEMENTATION.** To insure that each individual on the installation, for his own protection, is aware of this regulation and its contents, the following procedures will be followed:

a. Within 30 days after publication, each officer, warrant officer, and civilian supervisor assigned to this installation is required to read those parts of this regulation which are pertinent to his/her assignment.

b. Officers, warrant officers, and civilian supervisors will explain pertinent portions of this regulation to their personnel within 30 days after publication or within 10 days after arrival or hiring, as applicable.

c. Copies of these regulations will be kept in the reading file.

1-6. **RESPONSIBILITIES.** The success of the fire prevention program is a command responsibility. Designation of a Fire Marshal does not relieve a commander of this responsibility; the Fire Marshal is a technician whose job is to execute the commander's fire prevention program and make recommendations to improve the program.

a. The Commanding General is responsible for the fire prevention and protection at this installation and activities served by it. The Commanding General will use the functional statements published in AR 420-10, Facilities Engineering: General Provisions, Organization, Function, and Personnel, for the fire prevention and protection element of the Directorate of Facilities Engineering Organization as a basis for implementing a planned fire prevention and protection program. Division commanders and separate brigade commanders will appoint Division and Brigade Fire Marshals, respectively, to assist the Installation Fire Marshal.

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b. The Director of Facilities Engineering (DFE) is the Installation Fire Marshal and is directly responsible to the Commanding General for technical development and execution of the fire prevention and protection program.

c. Battalion and separate unit commanders will appoint area fire marshals and as many subordinate fire marshals as necessary to accomplish an effective fire prevention program throughout each division and activity.

d. Civilian personnel violating this regulation are subject to disciplinary action under FH Memorandum 690-4, Conduct of Employees. Military personnel violating this regulation are subject to disciplinary action under the Uniform Code of Military Justice.

e. Personnel assigned quarters are responsible for compliance with this regulation by members of their families, guests, and domestic employees and are pecuniarily liable for any property damage resulting from their acts or failure to act where evidence establishes that the occupant, under the circumstances failed to exercise due care.

f. Each individual on the reservation is:

(1) Responsible for exercising precautions and judgement in his own acts and duties. Lack of instruction or warning concerning fire hazards will not excuse acts involving conditions, practices, or materials commonly recognized as dangerous.

(2) When in a supervisory capacity, directly responsible for maintaining the area in which his employees work according to this regulation for instructing employees in safe operating practices, and advising them of applicable portions of these and other fire regulations, and for recognizing of these and other fire regulations, and for recognizing hazardous conditions not specifically covered in this regulation and removing or reducing the danger.

(3) When occupying quarters with minor children in his/her charge, liable and responsible in any case where it can be shown that reasonable precautions were not taken to prevent damage to the property by such children or that reasonable discipline and control were not exercised.

(4) Required, upon receipt of a written notice of a hazardous condition, to make the correction required or to deliver the notice to a person authorized to do so. If requested, a letter of corrections will be sent to the inspecting agency. In event correction cannot be begun or made in 24 hours, or the directive is unreasonable or impractical, a request for additional time or a reclama in writing will be made to the Fire Marshal within that time. Once started, corrective work will be diligently carried out.

g. When fire hazards and/or violations exist, not covered by current or existing regulations, III Corps Fire Department Inspectors representing the fire prevention section will make the final decision as to feasible and/or proper correction for such hazards or fire prevention violations.

1-7. FIRE DEPARTMENT EQUIPMENT.

a. Motorized Equipment. Motorized fire fighting equipment shall be used only for activities related to fire suppression, fire prevention, and other emergencies which may involve possible loss of life or fire damage to property. Use of pumpers for pumping out basements, flooded areas, and similar operation is specifically prohibited due to the high potential for damage to the pump from the introduction of silt and foreign matter into the pump intake. Housekeeping duties, such as washing streets and grandstands, except for washing down flammable liquid spills or similar fire-related activities, are prohibited. These functions are more properly performed by other equipment and manpower.

b. Fire Drills. No fire drills that involve response of motorized fire equipment are authorized without consent of the fire chief. The fire fighters will be informed when the practice alarm is given that the response is a drill.

CHAPTER 2

GENERAL

Section I. FIRE ALARMS

2-1. **ALARM OF FIRE.** Any person discovering a fire, regardless of the type or size, will immediately alert, or cause to be alerted, all personnel in the building and will report the fire to the fire department by the quickest available means. All fires will be reported, including those extinguished on discovery and those burned out before discovery. Supervisory personnel on being advised or learning that a fire has occurred, will - in the absence of positive knowledge that the Fire Department has been notified - immediately report the incident to the Fire Department. All personnel are responsible for knowing all available means of giving a fire alarm; lack of this knowledge is not an acceptable reason or excuse for delayed alarm. The Fire Department will be notified by one of the following:

a. **Telephone.** Use any telephone. Dial 117 and say, "I want to report a fire." Remain on the line until released by the person receiving the call. Carry out immediately any instructions given by the operator.

b. **Local Fire Alarm Box.** These boxes do not transmit an alarm to the Fire Department. They are only for evacuation of the building in which they are located. After pulling this type box, call the Fire Department as in a, above.

c. **Messenger or Radio.** A messenger or radio will be used if none of the above facilities are available.

2-2. **AFTER REPORTING A FIRE.** When possible and safe to do so:

a. After all personnel in the adjoining buildings. Close all doors and windows and shut off all fans and electric circuits. Doors and windows will not be reopened until after recall except by specific instructions from the Fire Chief.

b. During the time alarm is being turned in or immediately afterwards, available personnel will exert every effort to extinguish the fire with first aid fire fighting equipment, except as in c, below.

c. In the event the fire is in a closed or locked building, room, or compartment, no attempt will be made to enter or open the fire area, except for rescue of trapped personnel.

2-3. **DURING PROGRESS OF FIRE.**

a. **Traffic.** Vehicles meeting or being overtaken by emergency equipment showing a blinking red light or with siren sounding will immediately clear street intersections, pull to the nearest side of the road, stop and remain stopped until the emergency vehicles have passed, unless instructed to move by a responsible officer or by the military police (MP). Under no circumstances will unauthorized vehicles or persons follow emergency equipment at less than 500 feet.

b. **Entry to Fire Area.** During fire fighting operations, including overhaul and investigations, entry to the fire area is restricted to fire fighting forces and those having stipulated duties in connection with the operation. All other personnel will remain well outside the zone of activity. Any action, other than that necessary for preservation of life or prevention of injury, may be considered interference with the operations.

2-4. **FALSE ALARMS.** Any person maliciously or knowingly transmitting a false fire alarm by any means or for any purpose will be subject to punishment to the full extent the regulations or laws allow. Alarms arising from honest errors or transmitted in the belief that there is a fire are not false alarms under this provision.

Section II. DEFINITIONS

2-5. **APPROVED EQUIPMENT.** Approved equipment is that which has been tested and approved by a nationally recognized testing laboratory, such as Underwriters' Laboratories, Inc. Factory Mutual Engineering Division Laboratories; Factory Insurance Association; American Gas Association; National Bureau of Standards; United States Bureau of Mines; and American Standards Association. The Fire Marshal will make the final determination as to whether

or not other laboratories are recognized. Approved equipment will be used, located, and installed according to the stipulation in the listing of the approving laboratory. Listing refers to the inclusion of an item in publications of the approving laboratory, such as the Underwriters' Laboratory Electrical Equipment List.

2-6. ATTIC. An attic is that area of a building bounded and inclosed by the roof and the ceiling of the top story, or, in the absence of a ceiling, the area above the plate of the plate line and below the roof.

2-7. COMBUSTIBLE MATERIAL. Any material which can be ignited and, once ignited, will continue to burn. Noncombustible materials in combustible packages or wrappings are considered combustible.

2-8. ELECTRICAL WIRING SYSTEM. Any means of conveying current, except extension and appliance cords connected to the power source by means of standard plugs in receptacles provided for the purpose.

a. Sign, electrical. A fixed or portable, self-contained electrically illuminated device intended to convey information or attract attention by means of words or symbols.

b. Utilization, Equipment, Electric. Utilization equipment is equipment requiring electrical energy from any source for mechanical, chemical, heating, illumination, or similar purpose.

2-9. FIRE AREA. The fire area is bounded as follows:

a. During extinguishing operations.

(1) When the fire is at or near an intersection, the fire area is that area inside the far sides of the next parallel street on both sides of the street forming the intersection.

(2) When the fire is at or near the center of a block, the fire area is that area inside the far sides of the streets bounding the block.

b. During overhaul and investigation the fire area will consist of the building, or part of the building involved, and those areas where contents removed from the building are temporarily stored. This area will be established and marked by the person in charge of the overhaul or investigation.

2-10. FLAMMABLE MATERIAL. Any material which can be ignited easily and once ignited, burns with unusual rapidity.

2-11. FIREWORKS. As used herein, fireworks include any combustible or explosive composition or article prepared for the purpose of producing a visible or audible effect by combustion, explosion, deflagration or detonation, and includes but is not limited to blank cartridges, toy pistols, cannons, canes, or guns in which explosives are used, balloons requiring fire for propulsion, firecrackers, torpedos, skyrockets, roman candles, daygo bombs, and sparklers. Devices using paper caps manufactured according to United States Commerce Commission Regulations are not included. Pyrotechnics and other devices used in setting up training programs and military ceremonies also are excluded.

2-12. REASONABLE CARE. The exercise of precautions and control of action which would be expected of a normally prudent person under similar conditions.

2-13. REASONABLE TIME. The time required to effect correction by diligent and prompt effort, and not necessarily suiting the convenience of the occupant or using service. The Fire Marshal will determine the time allowed for correction and this determination is final upon delivery of written notification to the parties involved or any of their employees.

2-14. SAFETY CANS.

a. Safety cans for bulk handling of flammable liquids are especially designed portable metal containers with self-closing valved openings containing a flame arrester with a capacity of 1 pint to 5 gallons.

b. Safety waste cans are especially designed portable metal cans with self-closing, hinged covers, equipped with a handle to allow carrying in an upright position, with the bottoms set up from the floor.

c. Safety dip cans or tanks are especially designed with a basket for dipping parts and an automatic closing lid.

d. Safety bench cans are especially designed and contain a dasher which acts as a flame arrester; the lid is not automatic.

Section III. FIRST AID FIRE FIGHTING EQUIPMENT

2-15. EQUIPMENT. Included are all types of portable fire extinguishers, sand pails, dry powder containers, standpipe and hose lines, water barrels and pails, built-in extinguishing systems on vehicles, and local extinguishing systems. First aid fire fighting equipment will be used only for fire extinguishment or training and will be removed from the mounting or rack only for those purposes, or for inspection, testing, or recharging by authorized personnel. DA Form 253, Fire Extinguisher Record, is the required record of extinguisher maintenance, but is acceptable as such only when legible and securely attached to the extinguisher. Reasonable care will be taken to protect the record from damage, particularly on vehicles where exposed to weather or whipping due to vehicle movement. Removal or destruction by other than personnel responsible for maintenance constitutes willful destruction of a required record and is prohibited. DA Form 253, will be requisitioned by Unit Fire Marshals from Post Publications for Table of Organization and Equipment (TOE).

a. Installed in buildings.

(1) The Area Fire Marshal is responsible for the monthly inspection of the equipment, initialing DA Form 253, notifying the Fire Department of any deficiencies, and instructing the occupants in the use of the equipment. He will, unless otherwise instructed by the Post Fire Marshal, arrange for the annual inspection of extinguishers, including pickup and delivery to the Fire Station.

(2) Distribution of equipment, except as specifically provided below, will be according to NFPA Standards. Special type extinguishers (Classes B and C) are authorized only at locations where there is a reasonable expectancy of the presence of personnel to operate them and where the extinguishing agent can reach the fire.

(3) Fire extinguishers installed in buildings will be according to NFPA Standards and will not be removed from the building, except by authorized Fire Department personnel or for servicing and return. Units vacating buildings or making lateral transfers to another unit will not remove extinguishers from the buildings in which they are located.

b. In Outside Storage Areas. Extinguishers will not be provided in open storage areas in the cantonment area where hydrant protection is available.

c. Mounted on Vehicles.

(1) Commanding officers of the units using emit vehicles are responsible for insuring that all fire extinguishers are in good operating condition; all drivers, permanently or temporarily assigned, are familiar with requirements for maintenance and checking of all extinguishing equipment, including mechanisms for fixed systems, and are qualified to perform the maintenance, and equipment for testing is available, such as scales for weighing carbon dioxide (CO₂) and monobromotrifluoromethane (CF₃Br) equipment.

(2) All extinguishing equipment on vehicles will be sealed to allow prompt detection of tampering at any point. Materials and devices are authorized on the following basis:

(a) One each seal press, including engraving of identification marking per battalion maintenance shop.

(b) Seals, lead and wire antipilfirage FSN 5340-00-391-4240 at a rate of 1 1/2 times the number of extinguishers annually. These seals are available through the units' normal supply channels, and are packaged 100 per box.

(c) The seal press will remain in the custody of a responsible officer and will be issued for use only to personnel qualified to properly check the equipment.

(d) In Ammunition Storage Areas. Extinguishers will not be distributed in the ammunition storage (above ground or igloo) areas. A stock of Class A Equipment will be kept at the gatehouse for use by vehicles entering the area.

2-16. RECHARGING.

a. The Fire Department is responsible for the recharging and maintenance of all extinguishing equipment installed in buildings and on DFE vehicles.

b. Portable CO2 fire extinguishers will be weighted and checked at least once every 12 months. Fixed CO2 fire extinguishers will be weighed and checked at least once every 4 months. Pressurized water extinguishers will be checked and/or recharged at a minimum of once every 12 months or when the pressure gauge is below the normal operating stage or at any time the seal is broken.

c. In all cases where recharging is required on other than the annual recharge date, the request for recharge will be accompanied by a statement signed by the unit commander, stating the reasons for the request and the actions to be taken to prevent future occurrences.

d. Expedients involving conversion of fire extinguishers to uses other than containers for fire extinguishing materials will be allowed only under emergency conditions and then only when equipment designed for the purpose is unavailable. Training needs do not ordinarily qualify as emergencies. Extinguisher units for such expedient use will be issued from supply for the specific use and charged out accordingly. Fire Extinguishers being used for purposes other than fire fighting will have all labels and instructions and markings identifying them as extinguishers removed and will be marked in 2 inch letters "NOT FOR FIREFIGHTING". The units will then be permanently marked on two sides to identify the contents and give appropriate warning concerning any dangerous properties of the contents. Identification and warning will be in 1 inch block letters, of a color contrasting sharply with the background. Concerned units will not be returned to stock for issuance as fire extinguishers.

Section IV. SMOKING

2-17. PROHIBITIONS.

a. Smoking is prohibited without exception in areas in which "NO SMOKING" signs are posted.

b. Smoking is prohibited in the following type buildings and areas, except in specifically designated "SMOKING AREAS":

(1) Shops, storerooms, and warehouses.

(2) Within 50 feet of any warehouse or exterior storage stack.

(3) Within 50 feet in all directions from any flammable liquid storage, loading, unloading, or transfer point. Included are filling station driveways, points at which gasoline fired devices are filled, POL storage (any mount), and any other point where vapors from flammable liquids may be free in the atmosphere.

(4) Any area, building or location where, in the opinion of the supervisor or any fire prevention official, use of smoking material may entail danger to life or possible destruction of property by fire or explosion. Posting of "NO SMOKING" signs will designate such areas, whether or not specifically covered by this or other regulations.

(5) In or within 50 feet of any stopped or parked vehicle hauling flammable liquid cargo.

2-18. DISPOSAL OF SMOKING MATERIALS. Each individual smoker is responsible for the safe disposal of smoking materials.

a. Ashtrays will be of a type which will not allow burning out cigarettes to fall outside the container and will be protected from air movements which might blow the material from the container. Ashtrays will not be placed where accidental dislodgment will result in dumping or spilling the contents on light combustibles.

b. Under no circumstances will smoking materials be disposed of in wastebaskets or any type container which is combustible or which contains or might contain combustible materials.

c. Ashtrays, sand pails, and other devices for smoking material disposal will be used for disposal of combustibles of any other type.

- d. Smoking material will not be thrown or dropped from any vehicle.
- e. Any individual sufficiently mature to smoke is considered capable of exercising ordinary prudence in using and disposing of smoking material and, in the absence of extraordinary circumstances clearly beyond his control, will be held liable for any damage arising from or connected with his smoking.
- f. Butt cans normally will not be attached to a combustible building. Where the only feasible place to attach them is to a combustible surface, attachment will be by means of a noncombustible bracket which will provide not less than 1 inch clear space between the can and the supporting surface. In addition, a noncombustible shield (which may be part of the bracket) will be provided above the top of the can, parallel to and 1 inch from the supporting surface. The width of the shield will be not less than the diameter of the can, and the shield will extend from 1 inch below and to not less than 6 inches above the top of the can when in place on the bracket.
- g. Containers used for disposal of smoking materials will be painted red and clearly marked "CIGARETTE BUTTS ONLY" in white letters.

Section V. HOUSEKEEPING.

2-19. HOUSEKEEPING RESPONSIBILITIES. Performance of housekeeping activities is the responsibility of the using service.

- a. Trash and litter will not be permitted to accumulate on floors. Refuse material in quantities of less than 2 cubic feet may be placed in noncombustible containers with open tops and solid sides and bottoms. Larger quantities will be placed in completely enclosed covered metal containers. All trash and refuse, including salvageable material will be removed from the building at the close of each day's work.
- b. The use of plastic trash cans for the disposal of combustible trash or rubbish is strictly prohibited. The plastic cans are generally combustible and, when ignited, add fuel to the fire, as well as permitting their contents to escape as the plastic melts.
- c. Dumpster units and other central trash disposal units shall be located at least 15 feet from any combustible building, metal wall building, any unprotected opening in masonry wall buildings, and from storage areas.
- d. At no time will cut grass, trash, litter, rubbish, packing material, or other combustible material be stored or allowed to accumulate against, under, or within 10 feet of any building or structure.
- e. A high degree of general cleanliness and order is required at all times in arrangement of stored material, working stock, or completed work awaiting delivery.

2-20. HOUSEKEEPING SUPPLIES AND EQUIPMENT.

- a. Floor sweeping compounds will comply with Federal Specifications. Under this specification, compounds capable of flash at ordinary temperatures or after prolonged heating are not acceptable. Testing may consist of passing an open flame across a small amount of the material in a shallow open container. If any flash occurs, the material is classified as flammable.
- b. Only water type wax is authorized for general use.
- c. Brooms or mops will be stored in racks or hung, preferably outside the building, with the broom or mop end free from contact with combustible material and in a manner allowing free air circulation on all sides. Closets used for such storage will be adequately ventilated (one square foot free opening at or near floor and ceiling); if locked, the key must be immediately and conveniently available, with location of the key posted on the door. Storage is limited to janitorial supplies. Storage of housekeeping supplies and equipment in cadre rooms or troop bay is prohibited.
- d. Electrically driven floor waxers and brushes, when stored, will be tilted so that the brush or pad is not in contact with the floor or wall.
- e. Dust collection bags, prior to storage, will be emptied and turned inside out. When stored, they will be hung in a well ventilated area.
- f. Dust cloths, steel wool, felt buffing pads, and similar supplies will be kept in metal containers with close fitting lids.

g. Detergents and other powdered cleaning compounds will be kept in dry places and protected from accidental wetting, if accidentally wet the detergent will be removed from the building.

h. The use of flammable liquids, including gasoline, naphtha, Stoddard solvent, and Varsol, is prohibited for any cleaning purpose. Any material not in original containers clearly marked "Nonflammable" will be considered flammable. All-purpose detergent and water will ordinarily be used. In cases where heavy grease or oil cannot be removed by this method, a cleaning solution consisting of 1/4 pound of sodium hexametaphosphate (Graham Salt) and 2 ounces of general purpose detergent to a gallon of water will be used. Application is by mop; the solution is allowed to stand on the floor for at least 3 minutes and then mopped up. Where the deposit is heavy, scrubbing with a stiff brush may be necessary. Cleaning is completed by rinsing with clear water. The solution will attack painted surfaces, but other than protecting such areas, it may be used in the same manner as ordinary detergents.

i. Where available, commercial dry absorbents may be used for cleaning shop floors.

Section VI. OPEN FLAMES

2-21. OPEN FIRES. Open fires, including open flame lighting, are prohibited on the installation with the following exceptions:

- a. Fires in fireplaces--if properly protected by screens.
- b. Fires in barbecue pits or outdoor cooking devices, provided the quarters or building occupant assumes full responsibility for any fire damage caused thereby and the fire is in full view of and attended by a responsible adult at all times.
- c. Votive candles, candles used for table lighting in quarters, in small party rooms seating less than 100 persons, and in areas in clubs specifically approved by the Fire Marshal. When used in other places of assembly and in areas not specifically approved, each candle must be contained within the globe of a hurricane lamp. Persons placing or causing decorative or votive candles to be placed will be responsible for insuring clearance from combustible materials.
- d. The use and burning of scented or decorative candles and similar open-flame devices in barracks, Bachelor Officer Quarters (BOQ), Bachelor Enlisted Quarters (BEQ), and similar sleeping occupancies is prohibited unless constantly attended.
- e. Fires in shops, where such fires are a normal and accepted part of the process being accomplished.
- f. Fires on the ranges and on bivouac (Reference paragraph 6-3d).

Section VII. BUILDING COMPONENTS AND USES

2-22. BUILDING COMPONENTS.

- a. Electrical Wiring.
 - (1) No one will install, repair, or alter any part of the electrical wiring system, except under the direct supervision of the Post Electrical Shop.
 - (2) Extension cords will not be used to serve appliances or fixtures outside the room in which the fixed convenience outlet or fixture outlet is located, nor will they be attached to the building by tacks, nails, staples, or clips of any kind. Unserviceable Government-owned extension cords will be removed, tagged, and sent to the electrical shop for repair or replacement. Unserviceable, unsafe, or noncomplying privately owned cords will be removed and held at the Fire Station where they may be redeemed by the owner, after signing a statement that the device will not again be used on the reservation. Splicing of extension cords is prohibited. Kitchen cube taps (multiple outlets) will not be used.
 - (3) Connection cords for appliances are subject to all regulations covering extension cords (National Electrical Code).
 - (4) Fuses in branch circuits will not exceed 20 ampere capacity, unless specifically permitted by DFE electrical personnel and the fuse box is so labeled.

Over-capacity fuses will be removed by the inspection service and delivered to the Electrical Branch, DFE. Bridged fuses will be removed and destroyed and a written report sent to the Fire Marshal.

(5) Appliances using electrical energy are permitted, subject to the following:

(a) Each must bear the Underwriters Label signifying approval.

(b) Use of the appliance has been approved by the commander (not applicable to portable appliances in private quarters).

(c) Pecuniary liability may be imposed for loss or damage to Government property caused by negligence or the use of electrical appliances.

(d) The appliance is deemed safe by the inspection service. Unsafe appliances will be disconnected and not used until tested and approved by DFE electrical personnel. Users are responsible for arranging for and securing the required tests.

(e) Lamps in lighting appliances will be adequately protected from accidental contact with combustibles or flammables. Lamps in hospitals, such as bed lamps, will not exceed 60 watts and the fixture will be securely fastened in place. The individual in attendance on the ward or room will make frequent checks for compliance with these standards.

(f) Devices using Electrical Energy: Any locally assembled device, like but not limited to, display cases, map boards, training aids, and decorations using electrical energy in excess of 50 volts, except seasonal decorations in private quarters and exterior holiday lighting using Underwriters' Laboratory approved assemblies will comply fully with all applicable portions of the National Electrical Code concerning type and class of equipment, type and size of conductors' wiring methods, and method of installation of components, and be approved by the DFE for adequacy of design and equipment, and be inspected by him for compliance before being placed in service.

(g) Hot plates and food cooking appliances will be permitted in barracks, BEQ or BOQ sleeping areas.

(6) Electrical wiring installed for any purpose, or conduits installed for such wiring, will be used as hanger supports for electrical fixtures or equipment only and will not be used as temporary or permanent support for any device or material.

(7) Seasonal decorations wire for illumination will be constructed of noncombustible materials only and wired according to the National Electrical Code for Fixtures. Such decorations will not have any type switch between the convenience outlet and the device, and will be plugged in only when a responsible adult is present on the premises.

b. Heating Equipment.

(1) Heating equipment will be operated according to current instructions and within the temperature limits specified.

(2) No one except authorized employees will tamper with or change the setting of automatic controls installed on heating equipment in other than private quarters.

(3) Heating equipment not functioning properly or to the satisfaction of using personnel will be turned off or firing stopped and the condition reported at once to DFE. Lighting of pilots on gas-fired equipment will be the responsibility of DFE.

(4) The inspection service may order discontinuation of use of any heating equipment deemed unsafe. Such equipment will not be returned to service until inspected and approved by the DFE. Such approval will be denoted by a signed tag attached to the equipment, which may be removed by the inspection service for its records.

(5) Solid fuels will be brought into buildings only in quantities sufficient for one day's use, and then must be placed in containers at locations approved by the Fire Marshal. Liquid fuels must be handled with care and all spills carefully and immediately wiped up. Where saturation has occurred, the floor will be scrubbed daily with strong soap until all trace of the spill is removed. Fireplace and cooking fuels when stored outdoors will not be stored within 10 feet of any building or combustible structure.

(6) Use of gasoline-fired heating equipment, including Herman-Nelson Heaters, to heat any building other than tents is prohibited under all circumstances and for all purposes. Cleaning of tank and burner assemblies or any component thereof inside any building, other than an authorized repair shop, is prohibited.

(7) All gas-fired equipment will be connected to the gas service by a rigid pipe or flexible metal tubing. In all cases, a control valve will be provided at the point of connection to the gas system; no other valve will be provided on movable or portable space heaters. Space heaters and cooking appliances will be located to provide clearances from combustible portions of the building, as required by the Underwriters' Laboratory of American Gas Association Listing for the particular device. In the absence of a listing, minimum clearance of 18 inches will be provided, which may be reduced to 4 inches when a noncombustible shield with a 1-inch air space is permanently installed between the device and the combustible material. The shields must extend 6 inches beyond the device in all directions.

(8) Improvised heating equipment is prohibited, without exception, in the cantonment area. This precludes use of field type heating equipment of all types regardless of type fuel.

(9) Portable electrical heaters are generally prohibited for energy conservation purposes. However, when otherwise permitted, written approval of the fire marshal or fire chief will be required for heater use. Such heaters when permitted, shall be Underwriters' Laboratories, Inc., labeled or listed and shall be of a type in which the electrical circuitry is automatically shut off in the event the unit is tipped over. Power supply cords and plugs shall be in good condition and supply circuit shall be adequate for safe use.

(10) No beds, clothing, furniture, curtains, drapery, or any other combustible material will be placed less than 30 inches from any heating device other than steam or hot water radiators. Four-inch clearance is required between light combustibles and steam or hot water radiators. Clearances between heating units and combustible wall construction are governed by American Gas Association, and Underwriters' Laboratory Listings, or NFPA Handbook of Fire Protection, whichever is the least restrictive.

c. Draft Stop Partitions. This type wall is used to subdivide attics and to enclose stairwells in BOQs, barracks and other buildings. Doors and access openings through these partitions normally will be kept closed and latched. The doors will not be propped or wedged open or secured in the open position in any way. Doorways will not be used for passage for piping or wiring. Holes in these partitions for piping and wiring will be cut for a snug fit, located as low in the partition as practicable, and the opening closed by a tight fitting escutcheon on both sides.

d. Exit Facilities.

(1) No restrictive hardware, such as padlocks and hasps, throwbolts, and cross bars, shall be installed on any exit door, except as permitted by NFPA No. 101. Where either physical or classified security is a major concern, judicious use of two-point (top and bottom) latching panic hardware, without exterior door operating hardware, is an effective measure. Such doors, particularly when not normally under direct observation by operating personnel, also may be provided with simple and effective door alarm devices as an additional control measure.

(2) No "Knock-out" panel, "kick-out" panel, or emergency escape panel shall be provided in lieu of standard exit facilities as required by NFPA No. 101. Wherever it may be deemed necessary to block, obstruct, or rearrange an existing required exit in a manner which destroys or reduces its function, an additional exit or exits, designed, located, and arranged in strict conformance with NFPA No. 101 shall be provided.

(3) Exit doors shall swing with direction of egress (i.e., open "outward") where required by NFPA No. 101.

(4) Exit doors shall be unlocked during periods of occupancy.

(5) Exit passageways, corridors, and facilities shall be kept clear and unobstructed at all times.

(6) Combustible storage shall not be permitted in exitways.

(7) Padlocks and/or hasps are not permitted on doors of individual rooms and barracks, BEQs, BOQs, and similar sleeping occupancies, unless arranged to be locked in the open position. Interior locking devices on doors of such rooms shall be capable of operation by occupants within the room without the use of a key.

e. Exit illumination and marking. The following illumination and markings shall be provided according to the requirements and specifications contained in NFPA No. 101.

(1) Illumination of means of egress.

(2) Emergency lighting.

(3) Exit markings.

(4) Color of exit signs. Exit signs shall normally be a combination of red/white or green/white. However, every sign shall be distinctive in color and shall provide contrast with decorations, interior finish, or other signs.

f. Auxiliary kitchen equipment.

(1) Grease ducts, exhaust fans, grease filters and range hoods will be cleaned frequently to prevent any noticeable accumulation of grease. Special care will be taken where charcoal broilers and similar devices are used. Construction and installation will comply with National Fire Protection Association Standards.

(2) Refrigeration machinery will be frequently inspected by using personnel to determine need for cleaning. Cleaning will be done by refrigeration maintenance personnel, only.

g. Automatic Sprinkler or Alarm Systems. Any of the following will be reported immediately to the fire department.

(1) Damage to the system.

(2) Broken glass.

(3) Warning devices (bells, etc.) in operation.

(4) Use of piping, hangers or wiring as support for other than the parts of the system.

2-23. BUILDING USE.

a. Buildings or parts of buildings will be used only for the purpose for which they were originally constructed or altered to serve. Where other use is to be made of a building, permanently or temporarily, prior approval by the Fire Marshal is required.

b. No individual will be quartered in any building in which the prime occupancy is other than housing. Specific exceptions may be granted by the Fire Marshal where the building is fully protected by an automatic sprinkler system, or after investigation of the request and installation of any required safety devices or precautions required. Guardhouses and offices requiring 24-hour duty personnel are authorized sleeping quarters for duty personnel.

(1) Security of the building will not be considered as justification for exception, unless the persons so quartered are to maintain 24-hour guard or patrol service.

(2) In all cases where exceptions are granted and before occupancy of the building, the person initiating the request will notify the Fire Department of the number of occupants and the location of their sleeping facilities in the building.

(3) The use of attic space in any building, including quarters, as a sleeping area without the written approval of the Installation Fire Marshal, is prohibited. All sleeping areas must comply with the requirements contained in NFPA No. 101.

(4) Third floor or higher areas in quarters, regardless of whether or not the area is constructed for bedrooms, will not be used as a sleeping area unless exit facilities complying with NFPA No. 1 are provided.

(5) No space in any building accessible only by a scuttle, hatch, or trap door, or served by other than a standard stairway, shall be used as a sleeping area.

c. Storage Areas (other than regularly designated storage buildings):

(1) Storage of any type is prohibited in furnace or boiler rooms, transformer rooms or vaults, water heater closets, or mechanical equipment rooms. Storage of any type combustible materials is prohibited in attics, except where the attic is served by a stairway, adequate protection in the form of floors, or permanently fixed guards is provided to prevent contact between the stored material and wiring and heating equipment vents, and the area is enclosed to prevent trash and debris being blown in or falling into other areas in the attic.

(2) If storage of any type is found in these locations, it will be removed and held at the fire station, where it may be redeemed by the owner after signing a statement that it will not be stored in this location again.

(3) All stored materials will be neatly arranged and kept in an orderly manner.

(4) Exterior storage locations will be selected for maximum protection of the items from thrown or windborne sources of ignition.

(5) Storage areas, except in private quarters, will be segregated to the maximum extent from other parts of the building and used for no other purpose.

(6) Containers that have held flammable liquids will be stored according to the requirements for flammable liquids.

(7) Where individually assigned storage facilities, including garages and carports, are provided in connection with quarters and the occupant has sole access to the area, it will be the responsibility of the occupant to keep the area free from unauthorized entry and to control any children using it as a play area.

(8) Where common storage is provided and various individuals have access to the area, the senior officer or noncommissioned officer sharing the area is responsible for the building.

(9) In company supply rooms and similar facilities where combustibles, such as laundry bundles, may be delivered for storage of any duration, positive measures will be taken to prevent stacking against or within 3 feet of heating equipment, automatic or manually controlled. This may be done by use of barricades or painted areas on the floor.

(10) Temporary Storage Areas: Where rooms or parts of buildings not designed for storage, such as cadre rooms in barracks and office areas in shops and administration buildings, are used for temporary storage of combustibles, the following precautions are mandatory:

(a) Smoking is prohibited at all times in the room or area. Also prohibited is smoking by personnel engaged in transfer of material to or from the storage area, from or to transport or user, and in or near the transport vehicle.

(b) Positive measures will be initiated to control access to the area; the Charge-of-Quarters (CQ) will make and record an inspection of the storage area not sooner than 1 hour or more than 2 hours after any person allowed access to the area leaves.

2-24. CONSTRUCTION, ALTERATION, AND MODERNIZATION.

a. All projects will be coordinated in the conception stage with the DFE Fire Prevention and Protection Division, and will be technically reviewed and annotated by the responsible individual of that division before advertizing for bids. Projects incorporating new fire protection systems of major alterations of existing systems will be sent to Commander, FORSCOM, for technical review and comments.

(1) "Self-help" projects of all types will comply with the same fire protection criteria as other construction.

(2) Modification of existing buildings will include provisions for corresponding alterations, additions, or extensions of existing installed fire alarm or fire protection systems to insure maintaining integrity of the protection.

(3) The use of combustible interior finish materials, including accoustical treatment, is prohibited. Interior finish materials installed as a part of change, alteration, and modernization projects shall comply with DOD 4270.1-M criteria (Class "A" flame spread rating of 25 or less, and smoke development rating of 50 or less) in exit corridors and passageways and all other areas where so required by NFPA No. 101, Life Safety Code. Interior finish in all other areas shall be Class "B" (flame spread rating of 75 or less and smoke development rating of 100 or less). The use of Class "C" or "D" materials, as defined in NFPA No. 101, is prohibited. Movable partitions also will comply with this criteria.

b. No alterations to any building will be performed by troops without prior approval of the Fire Chief. Further, no alteration will be performed to any building which may lower the fire resistivity of that building.

Section VIII. SPECIAL HAZARDS

2-25. FIREWORKS.

a. Fireworks will not be stored, offered for sale, used, exploded, or burned at any point on the reservation, except supervised displays under the supervision of a competent operator when authorized in writing by the commander.

b. Unauthorized fireworks found on the post will be seized by the Fire Marshal or Military Police and retained in whole or in part for evidence.

c. Any person using other than authorized fireworks will be held fully liable for any loss from any fire starting from or aggravated by such use or possession.

2-26. RADIO AND TELEVISION RECEIVERS.

a. Radios and television sets will not be left on at any time the building is unoccupied.

b. Outside antenna systems will be installed according to the National Electrical Code and FH Regulation 420-27, Care, Maintenance, and Alteration of Facilities. Authority for erection of outside antennas must be obtained from the DFE. Lighting arrestors, adequately grounded, must be provided for each conductor of the antenna lead-in. This section applies to tactical type transmitting and receiving antennas when mounted on tents or where the lead-in enters buildings or tents.

c. The openings in radio and television cabinets for release of the heat will not be obstructed in any degree.

d. Outside structures, antennas, masts or towers will be installed as far away from electrical power lines as possible. A distance equal to at least twice the height of the structure should be maintained.

e. Reasonable clearance will be maintained between radio and television cabinets and combustible materials. In no case will combustible materials be stacked on or draped over the cabinets.

f. Power connections for radio and television sets will be according to 2-22a(3) above.

2-27. TAR POTS AND KETTLES.

a. Kettles for heating asphalt and similar materials shall be equipped with proper heat controls and means of agitation to assure controlled uniform temperatures throughout the contents to prevent spot heating.

b. The material shall not be heated above the temperatures necessary to produce workable fluidity and in no case above its flash point.

c. Tar pots or kettles shall not be operated inside, on the roof, or within 25 feet of any building. They must be attended by a competent operator. A minimum of two 20-pound dry chemical extinguishers shall be provided at the tar pot and at the area of tar application.

d. When the material is applied within buildings or inclosed areas, the atmosphere shall be free of dust and adequate ventilation shall be provided to completely remove all smoke and fumes.

e. All smoking, open flame devices, and/or other sources of ignition shall be prohibited in or near the area of application.

f. Mops, brushes, or other applicators shall be stored in an area approved by the Fire Chief.

2-28. PROTECTION OF COMBUSTIBLES. Persons using devices capable of producing heat, sparks, or embers will exercise care necessary to prevent ignition of any combustible materials in the vicinity. Combustible materials will:

a. Not be allowed to accumulate against any building or structure at any time.

b. Not be placed in contact with or within 18 inches of any light bulb, nor so placed that accidental movement of either or both can result in contact or a separation of less than 18 inches.

c. Not be left in trucks or other vehicles overnight, nor will trucks hauling this type cargo be left unattended.

d. Not be placed or stacked in any location where rolling or upset of the stack will allow contact with electrical equipment, heating devices, moving belts, or heat vents.

e. Be immediately disposed of either by use of dumpsters or taken directly to the landfill.

2-29. FIRE HYDRANTS. Fire hydrants will not be obstructed by fences, trees, barriers, or dirt fills, nor will they be used for other than fire fighting or fire drill, except when specifically approved by the Fire Marshal. The Fire Department will remove and confiscate any unapproved devices attached to fire hydrants. In such cases where use of fire hydrants is necessary, immediate written notice will be given to the Fire Chief. Approval for special use will include the following conditions:

a. Availability of standard hydrant wrench for operating the hydrant; no other type wrench will be used.

b. Constant attendance during the time the devices are in use by a person equipped to remove promptly any devices attached to the hydrant, and devices installed on a hydrant are arranged so as not to interfere with free 360 degree swing of the hydrant wrench on the valve stem.

c. All caps and gaskets are replaced promptly when hose or other devices are removed from the nozzle.

d. Use is such that a 4 1/2 inch and 2 1/2 inch outlet are available for use by the fire department.

e. Discharge from the connection to the hydrant is controlled by a valve independent of the hydrant valve.

f. Parking of vehicles within 15 feet of a fire hydrant in any direction is prohibited. Head-in parking is not restricted where hydrants are located on islands and the parking does not reduce accessibility of the pumper connection.

g. No vehicle will be parked within 10 feet of any building or 5 feet of any fence, or on any street or access road where it will interfere with movement of fire fighting equipment or required maneuvering to get in an operating position, or where it will interfere with deployment of fire fighting devices (hoses, ladders, etc.). Where temporary blockages are unavoidable, such as unloading or loading, the operator will be positioned and the vehicle arranged so that it can be removed promptly in event of an emergency. Immediate compliance with an order to move from the fire department officer in charge of the emergency or the Military Policy is mandatory.

h. Blocking access to any buildings by any means, such as chains, logs, piping, cables, etc., or entrance to alleys, fire lanes, streets, or parking lots is prohibited.

2-30. FLAMMABLE MATERIALS.

a. Flammable and combustible liquids. All flammable and combustible liquid storage shall conform to the requirements of NFPA No. 30. Flammable liquids are defined as any liquid with a flash point below 100° F (37.8 C). Combustible liquids are defined as any liquid which will burn but has a flash point in excess of 100° F.

(1) Flammable liquids shall not be used for cleaning equipment parts. Nonflammable cleaners or solvents and/or water-solvent detergents shall be used for such purposes.

(2) Flammable liquid shall not be used to clean or refinish floors, desks, or other furniture and furnishings.

(3) When cleaning or refinishing floors with combustible liquids, the following shall be observed:

(a) Provide all possible natural ventilation and/or adequate mechanical ventilation to dissipate vapors.

(b) Prohibit smoking in the work area.

(c) Keep all open flames and spark-producing devices away from work area.

(d) Shut off all pilot lights in vicinity.

(e) Clean only a small area at a time.

(f) Restrict the amount of fluid to that necessary for the immediate operation.

(g) Prohibit the use of open containers.

(4) Day-to-day stocks of flammable liquids shall be kept only in areas approved by the Fire Marshal. Such storage areas shall be well ventilated and marked to indicate the storage of flammable liquids. Containers must be plainly marked to indicate the nature of the contents.

(5) Gasoline and other flammable liquids shall not be kept, stored, used, or dispensed with 50 feet of any building, except by means of Underwriter's Laboratories, Inc. listed safety cans in good condition, unless in a flammable liquid dispensing room specifically approved by the Fire Marshal.

(6) Gravity discharge of any flammable liquid from tanks, drums, or containers other than Underwriter's Laboratories listed safety can is prohibited within all buildings.

(7) Flammable liquids shall not be drawn from or dispensed into tanks or containers within a building, except with the drum in upright position, using an approved type manually operated barrel pump and only in locations approved by the Fire Marshal as flammable liquid dispensing rooms.

(8) Combustible liquids may be stored in closed metal containers having an individual capacity of not more than five gallons. The use of glass or plastic containers other than listed safety cans is prohibited.

(9) All tanks, hoses, and containers shall be positively bonded while flammable liquids are being poured or dispensed to prevent static electricity discharge.

(10) Transfer of flammable liquids by compressed air or gases is prohibited.

(11) Gasoline, oil, or any other flammable liquid shall not be discharged into, or permitted to accumulate in storm drains or storm or sanitary sewers.

b. Flammables, regardless of quantity, will not be stored in any place of public assembly, barracks, BOQs, BEQs, etc., or within 50 feet of such buildings.

c. Where occupancy of any building requires storage of flammables, such as office supplies of type cleaner, ditto fluid, and laboratory reagents in small quantities for frequent use, the total quantity on hand will be kept to the minimum - consistent with time required for normal supply. The portion not in desk or table containers will be stored in the original shipping containers if capable of being resealed, in a cabinet or closet ventilated to the outside where practical and plainly labeled "FLAMMABLE". Only one

container for each type material may be broached at a time. Desk or table containers may not exceed 8 full ounces in volume.

d. In cases where no other reasonable secure storage is available, quantities of gasoline and other fuel not in excess of 10 gallons total may be stored at quarters in the fuel tank of outboard motors, power mowers, and similar equipment provided:

(1) All openings to or from the tank are closed vapor tight. This includes fill openings, vents, pressure connections, and lines to carburetors.

(2) The storage site does not contain any possible source of ignition, such as water heaters, furnaces, electrical appliances, etc.

(3) The location is such that the device is protected from mechanical injury.

(4) Adequate ventilation of storage area is provided to prevent accumulation of flammable vapors. Below-grade basements and cellars are not acceptable storage areas.

(5) Storage area is not occupied as living space or an exit.

(6) The occupant will be held liable for losses by fire which are caused by his negligence in storing or using flammable materials.

e. Storage tanks above ground will be dyked; the dyked area to have a capacity at least equal to the volume of the tank or tanks enclosed. The tanks will be marked with 2-inch letters "NO SMOKING WITHIN 50 FEET" on all sides.

f. L-P Gas in Quarters. L-P Gas is defined as liquified petroleum gases (LPG, L-P Gas, Bottled Gas) which contain any of the following hydrocarbons: propane, propylene, butanes (normal and iso) butylenes.

(1) Portable equipment, such as camp stoves and lighting equipment, using LP gas may be stored in quarters, but under no conditions will the devices be fired or operated inside the building.

(2) Gas containers, where possible, will be disconnected from the devices and checked for leaks by immersion in water prior to storage. Leaking containers will be placed outdoors at a location safe from ignition until they can be safely disposed of.

(3) Storage will be at a location which minimizes exposure to excessive temperature changes, physical damage, or tampering by unauthorized persons, particularly children. The site also will be remote from exits, stairways, or areas normally used for or intended for use as safe exits.

(4) Storage in basements or other below grade areas is prohibited.

(5) Any gas container which has been dropped or subjected to heavy impact whether visibly damaged or not, or which has been subjected to other than minor abrasion, will be returned to the supplier for certification of its safe condition before being stored.

2-31. FUELING OPERATIONS.

a. Only authorized and properly trained personnel will be permitted to operate major fueling equipment. Knowledge of the equipment hazards involved and the regulations for handling flammable liquid will be required. Also, the operator must be familiar with the nearest telephone and/or fire alarm box; how to call the fire department; and location and operations of first-aid fire fighting equipment.

b. "Self-service" gasoline stations shall have a fully qualified attendant in the immediate vicinity of gasoline dispensing operations during all periods that the facility is open for use. Automatic nozzles with latch, or other latching-type nozzles, are not permitted in self-service gasoline stations.

c. Unattended gasoline stations are prohibited.

d. Operators of vehicles and mobile equipment shall turn off engine, lights, and short-wave transmitter before taking on fuel.

e. Vehicle operators, attendants, or others shall not smoke or light a match or lighter during fueling and there shall be no open flame in the vicinity.

- f. Latching or locking devices which restrict or impede the ability to stop the flow of fuel shall not be permitted on any gasoline or other flammable liquid dispensing nozzle in nonself-service gasoline stations.
- g. The operation of any vehicle leaking fuel or excessive amounts of oil will be prohibited until necessary repairs have been made.
- h. Flammable liquid containers found to be leaking shall be moved to a safe location and contents transferred to serviceable containers. Arrangement shall be made for proper disposal of leaking containers.
- i. No glass or plastic containers (other than a plastic container listed by Underwriters' Laboratories, Inc., or factory Mutual Engineering Corp.) shall be used for gasoline. Service station operators are prohibited from dispensing gasoline into containers that are not approved, even for emergency purposes.
- j. No vehicle transporting explosives shall be refueled with gasoline while explosives are in the vehicle, except in an emergency and then only with the engine stopped, all lights and radios off, and static grounding devices properly connected.
- k. No defective or leaking fuel dispensing equipment (e.g., nozzles, hoses, pumps) shall be permitted to operate until restored to proper operational condition.
- l. Not used.
- m. "Make-shift" fuel dispensing or defueling arrangements are prohibited. Fuel dispensing, storage locations, arrangements, and equipment shall conform to the pertinent requirements of the National Fire Codes or applicable Army technical manuals. Defueling into open containers is prohibited.
- n. Automotive vehicles and other spark producing equipment shall not be operated within 50 feet of any fuel spill involving gasoline or fuels of similar characteristics until the spill has been cleaned up and all flammable vapors have dissipated.
- o. Fueling of lawnmowers and other gasoline powered equipment or dispensing of any flammable liquid will be done outside of all buildings, including garages, basements, or right-of-ways associated with family quarters. Inside fueling is prohibited.
- p. Lawnmowers, edgers, tillers, etc., shall not be refueled until sufficient time is allowed for the engine to cool.
- q. Use of standard safety cans for transportation, storage, and use of flammable liquids is mandatory for quantities in excess of 8 ounces, except as permitted by this regulation. For quantities of 8 ounces or less, used or stored in other than laboratories, unbreakable containers capable of being tightly closed may be used when specifically approved by the supervisor. Glass reagent bottles may be used in authorized laboratories. Flammables will not be brought into any building, except where specifically authorized, in other than standard safety cans, as permitted in r below.
- r. Containers authorized and issued for tactical purposes will not be used for maintenance or operation in the cantonment area. Storage of tactical containers in motor pools may be in the vehicle rack or in designated, marked and segregated areas according to FM 10-68 and FM 10-69. All containers used for storage, issue, and transport of flammables shall be clearly marked, and closing or sealing devices must be in good working condition. Empty containers are subject to all provisions for containers of flammables.
- s. Filling tactical containers while in the bed of vehicles is prohibited.
- t. Fueling of aircraft will be in strict accordance with NFPA Standards and FM 10-68.
- u. Liquid Fuels: Included are all types of equipment using liquid fuels, such as ranges, ovens, immersion heaters, lanterns, and similar devices. Use of this type equipment in any building in the cantonment area, other than in authorized repair shops, is prohibited for all purposes and under all circumstances. Cleaning, emptying, or refilling of tanks or burner assemblies inside or within 50 feet of any building or tent is prohibited. Where this type work is being done, smoking will be prohibited and reasonable care will be taken to prevent vapor travel to an ignition source. See Chapter 15, below for storage of this equipment.

v. Draining Flammable Liquid Tanks. This procedure applies to fuel tanks on vehicles, skid or trailer-mounted equipment, such as generators or pumps, heating equipment and lighting equipment; the tank may be an integral part of the equipment or portable.

(1) Draining fuel from tanks will be done outdoors, except as permitted in (7), below. Site selected will be at least 50 feet from any vehicle, road, or building, with terrain of such nature that any vapors generated can be rapidly dissipated. Smoking, use of any flame or spark-producing devices, and vehicle movement under its own power will be prohibited in the area during the draining operation and for a minimum of 30 minutes after the receiving vessel has been securely closed.

(2) The following procedures will be followed without exception (as used herein, "Tank" refers to the vessel being drained): Before beginning the operation, all parts of the vehicle or device will be cooled to a degree which will allow firm grasping by the bare hands without discomfort. All electrical equipment will be de-energized. Batteries will be disconnected and removed at least 50 feet from the tank being drained. The receiving vessel will be firmly electrically bonded to the tank being drained; this bonding connection will be made before opening the drains and will remain in place until the draining has been completed and all openings in the tank and the receiving vessel have been sealed. Drainage will not be allowed to discharge on the ground.

(3) The receiving vessel will be of a type capable of being closed or sealed vapor tight, such as a standard safety can or 55-gallon drum.

(4) On completion of the draining operation, spills on any part of the equipment, including the receiving vessel, will be wiped up, and the equipment allowed to dry not less than 30 minutes before any further work.

(5) After the equipment is dry, the receiving vessel will be disconnected and moved at least 50 feet from the work site.

(6) After completion of the above, work on the tank or vehicle may proceed. Hot work, or any work involving cutting or abrading (grinding, filing, etc.) on fuel tanks will begin only after purging 8-12, below.

(7) Draining may be done inside shops or other buildings where vehicle size or condition precludes movement to the outdoors for the operation, subject to the approval of the Fire Marshal and full compliance with such precautionary measures as he may deem necessary. In such cases, provision of all possible natural ventilation regardless of weather conditions is mandatory.

2-32. TANK VEHICLES. Tank vehicles for transportation of flammable liquids will comply with the following:

a. Each compartment will be equipped with an automatic emergency shut-off valve inside the tank, with control remote from fill openings and discharge faucets. Each driver will be familiar with the operation of these valves.

b. The pump engine shall be shielded from spillage or leakage.

c. Drag chains are not required. Bonding is required when unloading into above-ground tanks or other vehicles.

d. Tank trucks, semitrailers, fuel serving trailers, and containers with capacities in excess of 55 gallons will be loaded only at loading racks complying with current regulations. This restriction applies to loading all type fuels and petroleum base solvents. All precautions prescribed by FM 10-68 and FM 10-69 for preparation for loading and for unloading will be observed. In the absence of standard loading facilities, vehicle service facilities may be used, provided the following additional mandatory precautions are observed:

(1) All bonding and grounding devices required for standard loading racks, or their equivalent, will be provided.

(2) The filling nozzle will be of a type which must be held open by the operator (nozzle with hold-open devices of any type will be used only after permanent modification has been made to eliminate the hold-open feature). The nozzle will discharge into a section of conductive hose tightly fitted to it; the hose will extend to the bottom, or nearly to the bottom, of the tank when the nozzle is held at a comfortable working height and positioned outside the dome.

2-33. USE. Supervisory personnel at all levels will be held accountable in all cases for fire or accidents arising from or involving use of flammables. In case violation of any published regulation is involved or failure to exercise ordinary prudence can be demonstrated or reasonably inferred, responsible personnel may be subject to disciplinary action or held pecuniarily liable, or both. Detailed information concerning safe use and handling of flammables may be found in National Fire Codes, published annually by the NFPA. In the absence of other regulations, the NFPA Standards apply.

a. Gasoline, without exception, will not be used for cleaning. Other flammable liquids may not be used, except:

(1) Where small amounts (2 ounces or less) are used by the operator for cleaning typewriters and similar office equipment.

(2) When used in laboratories, pharmacies, and similar occupancies for cleaning and drying glassware and laboratory equipment.

(3) When used for purposes and under conditions stipulated in c and d, below.

b. When flammable liquids are used in any confined area other than as excepted in a, above, all heating equipment, including pilot lights, will be extinguished, and all electrical circuits, unless approved for use in Class I, Division 1 Areas (National Electrical Code) will be de-energized by opening the main switch. These precautions apply to the entire building. A "NO SMOKING" area will be set up 20 feet in depth on all sides of the building, and signs will be posted at intervals along the limit line. The designated area will be OFF LIMITS, except to personnel either engaged in or supervising work. The material will be brought into the building or area only in quantities sufficient for immediate consumption. The building will not be opened for normal occupancy until thoroughly ventilated and combustible gas indicator tests show absence of any flammable vapor-air mixture. If natural ventilation will not purge the building within 2 hours, mechanical ventilation will be used. Equipment used for this purpose will be of a type approved for use in Class I, Division 1 Atmospheres; this requirement will ordinarily preclude use of exhaust fans and other air handling equipment installed for building ventilation.

c. When flammables are used in places of public assembly, the premises will not be opened for assembly until thoroughly ventilated and all traces of vapor have disappeared. The material may be brought into a place of public assembly only in quantities sufficient for immediate consumption.

d. Flammables will not be used in appreciable quantities, except where specifically permitted herewith, without prior notification to the Fire Department. The person directing the actual use will be responsible for the notification.

e. Where Technical Manuals and other Department of the Army publications permit and recommend use of flammable solvents or cleaning internal combustion powered equipment and in other processes, the requirements for observance of fire prevention and safety regulations and practices are not reduced, nor is the need eliminated for exercising reasonable precaution and prudence by supervisory and using personnel. The following precautions will be observed:

(1) Flammable solvents will be used only where the grease or foreign material cannot be removed by soap and water or other nonflammable agents, and then only in the minimum quantity necessary for removal of the deposit.

(2) When cleaning parts removed from vehicles or small size items by washing, standard safety dip cans are required.

(3) When the quantities of parts to be cleaned exceed the capacity of dip cans (2), above, a vat meeting the following requirements will be provided.

(a) Location of the vat will be at a point where natural ventilation will move any vapors directly to the outside and away from possible sources of ignition or to where safe mechanical ventilation is provided.

(b) Construction will be all metal, including supports.

(c) An automatic, self-closing and self-locking lid will be provided.

(d) The vat will be located so there is no danger of accidental upset during filling, draining, or cleaning operations, or from movement of vehicles or material handling. If located at a point subject to possible overturning, the vat will be securely anchored to the floor or building frame.

(e) All electrical wiring outlets, fixtures and devices immediately above the tank and a space of 3 feet around its perimeter, and all outlets within 20 feet of the tank and lower than the top of the tank, will be a type approved for use in Class I, Division I locations.

(f) Vat drains will be of a type that must be held in the open position and will not be secure in the open position at any time. Drains will be in the closed position.

(g) Storage of flammables will be limited to 5 gallons per company in the building or where the largest vat capacity exceeds 5 gallons, to one charge in the vats and one charge per vat in standard safety containers. Waste or used charges will be drained from the tank into approved containers and taken immediately from the building for disposal in a manner approved by the Fire Marshal.

f. Cleaning vehicles.

(1) No work will be done on the electrical system of a vehicle where a solvent has been used on that vehicle or any other vehicle within 50 feet of it until the solvent has thoroughly drained and all traces of the vapor have disappeared. In some cases, this may take as long as an hour.

(2) Flammable solvents will not be used for cleaning any part of a vehicle until all parts, including the exhaust manifold, are cool enough to allow gripping with the bare hands without discomfort.

(3) Where cleaning or other operations require use of flammables inside the hull or engine compartment of a vehicle.

(a) The entire electrical system will be de-energized by disconnecting first the grounded side and then the ungrounded side of the battery or batteries.

(b) The disconnected battery will be removed or protected from accidental metallic contact across the terminals by replacing the cover, or by securing in place a temporary cover of wood or other insulating material.

(c) Extension cords, trouble lights or other electrical equipment, if used in or within 20 feet of the vehicle, will be of a type approved for use in atmospheres containing flammable vapors.

(d) Two men will be present at all times during the operation. Only one man may enter or be in the vehicle at any one time; the second man will remain outside to render assistance if required and to insure that all precautionary measures are observed.

(e) Electrical fixtures used for working on vehicles will be of a type in which the light bulb is fully enclosed and protected. No other source of artificial light may be used.

(4) POVs leaking fuel on parking lots will be removed to a safe location at the expense of the owner either by the Military Police or the Fire Department when the owner cannot be located.

2-34. GUIDED MISSILE FUELS.

a. JATO units and warheads are Class 10 Explosive Hazards and for fire fighting purposes are SYMBOL 4 Items. In storage and handling or in live missiles, they will be treated according to current regulations.

b. Nitric acid is not flammable but will supply oxygen and help create a fire when combined with fuel. The fumes are toxic. Concentrated fumes, or liquid in contact with the body will cause severe burns and serious injury. A fire which has just started may be controlled with first aid fire extinguishers, small hose streams, and other available water supplies. Fires in stages requiring heavy streams, and in which involvement of the missile is imminent, generally cannot be controlled without unduly endangering the lives of fire fighters. Fires from spills can be prevented by prompt dilution of the spill with water in quantity.

c. J-P Fuel is in the gasoline-kerosene family. Precautions and facilities contained in FM 10-68, FM 10-69, and TM 5-848-2 are mandatory. J-P fuels, unlike gasoline, frequently develop explosive vapor air mixtures in partially filled tanks and containers. Excessive agitation and excessive velocity in pipelines develop heavy static charges in the liquid and arcing from the liquid surface to the tank body is possible. These characteristics increase the importance of rigid compliance with all safety measures.

CHAPTER 3

FIRE PREVENTION

SECTION I. ORGANIZATION FOR FIRE PREVENTION AND PROTECTION

3-1. DESIGNATION OF FIRE MARSHAL. The DFE is appointed Fire Marshal and assigned full responsibilities for all fire prevention and protection activities. In all matters pertaining to these activities, he will act for and be responsible directly and only to the Installation Commander.

3-2. DUTIES OF FIRE MARSHAL. The Fire Marshal, in addition to the duties outlined in AR 420-90 and FORSCOM Regulation 420-24, will:

a. Be responsible for the promulgation and enforcement of fire prevention and protection regulations necessary to safeguard life and to protect any and all property on the post from loss or damage by fire.

b. In case of fire, assume jurisdiction over all personnel on the post to the extent he deems necessary to overcome the emergency.

c. Be responsible for preparation of agreements for mutual aid for the signature of the commander.

d. Be responsible for conducting technical investigations of fires for determination of cause, reasons for conditions giving rise to cause, corrective action necessary, and for submission of recommendations concerning liability of persons, in his judgement, responsible for the fire and for disciplinary action if warranted by the circumstances.

e. Arrange with the Commanding Officer, Darnall Army Community Hospital, for annual physicals for fire fighters and coordinate the schedule for the examinations.

f. Set up requirements for electrical means of communications for fire reporting and control, including priority for use by installation elements using the facilities.

3-3. FIRE CHIEF. The Fire Chief, in addition to the duties outlined in AR 420-10, AR 420-90, and DA Pamphlet 420-2, Management of Fire Prevention and Protection, will:

a. Be in complete charge of all fire fighting operations and will not be interfered within any manner, except that he may be relieved by the Installation Commander or Fire Marshal when, in the opinion of either, he is incompetent to handle the situation.

b. Be responsible for recognizing need for changes, deletions, or additions to this regulation and preparing necessary changes for approval of the Fire Marshal.

c. Furnish technical assistance to the Area Fire Marshals.

d. Review all fire plans for adequacy and practicality.

e. Coordinate plans for fire fighting and control with other installation elements concerned, recording operations agreed upon in memorandums of agreement.

f. Plan and supervise training to insure physical fitness of Fire Department personnel.

g. Not later than 1 June of each year, submit to the Fire Marshal a general program, chronologically arranged, of fire prevention activities for the coming fiscal year, as required by paragraph 4, DA Pamphlet 420-2.

h. Begin the investigation of fires and carry on until arrival of the Fire Marshal, and prepare the necessary preliminary reports.

i. Be prepared to appear as a technical expert before any board or investigating authority.

j. Be responsible for notifying supervisors of activities when cleanup of premises or facilities is necessary after a fire.

3-4. AREA FIRE MARSHALS. In addition to the duties outlined in paragraph 2-6, AR 420-90, the Area Fire Marshal will appoint the number of subordinate fire marshals deemed necessary to carry out the Command's Fire Prevention and Protection Program within his assigned area. The duties and responsibilities of area and subordinate fire marshals are:

u. Be responsible for proper discharge of the duties assigned the subordinate fire marshal in his area, for coordination of their activities and liaison with high levels of command.

b. Assume full charge of fire fighting operations in his area until the arrival of the Fire Department.

c. Be responsible for posting guards for security and fire watch after each fire. The guard service will be continued until terminated by the Fire Marshal.

d. Prepare an area fire plan and unit and building fire plans, as required by Section 11, below.

e. Conduct and maintain a record of monthly building fire inspections according to 3-13, below.

f. Set up a schedule for fire drills. Conduct and record the results of fire drills according to 3-13, below.

g. Conduct monthly inspection of all first aid fire fighting equipment in assigned area, to include vehicular mounted extinguishers. Insure the extinguishers are technically inspected and recharged, as required by 2-16, above.

h. Post on the main door of the buildings in his area an 8 x 5 inch card bearing the name of the subordinate fire marshal with rank or grade and telephone number (FH Form 40). The card will be posted inside glass doors and on the outside of solid doors. In the event the building is not normally open during working hours, the card will designate the location of the keys, the person in charge of the keys, and the telephone number of the person.

i. Instruct all occupants of the location on how to use all fire alarm facilities, and first aid fire fighting equipment.

j. Instruct all personnel in proper action to take on discovering a fire (alert, report, fight, assist).

k. Instruct all personnel on regulations which apply to individuals responsibility and liability.

3-5. ENGINEER ALERT CREW.

a. The supervisor of each shop concerned will designate one or more persons as members of this crew. The crew will consist of:

(1) An electrician equipped for and capable of performing pole work and handling high voltage wiring or equipment.

(2) A plumber familiar with valve locations on both the gas and water distribution systems.

(3) Pumping station operator.

(4) On request, any other technicians necessary for handling conditions involving special or unusual hazards.

b. The members of the crew will report directly to their assigned stations or to the Fire Chief in event of a fire. Any preassigned duties will be carried out promptly on receipt of the alarm.

c. The alert crew will be organized so that one person in each category will be available at all times, either in duty or on-call status.

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3-6. PROVOST MARSHAL. The Provost Marshal will be responsible for traffic control and security and will assist the investigating officer upon request. He will arrange for automatic response of sufficient MP personnel to:

- a. Clear the route to the fire; stop all traffic in the fire area; and limit entry to the fire area to the Fire Department apparatus and vehicles, the Installation Commander and his deputy, ambulances, and utility trucks until notified by the Fire Marshal that the emergency is over.
- b. Provide security of the building involved and of any contents remaining in it or removed from it.
- c. Assume charge of the investigation of any fire where he or the investigating officer suspects arson.
- d. Assist the investigating officer, on request, in handling, holding, segregating, and interrogating witnesses, including use of polygraph when advisable and authorized.
- e. Furnish photographic service, when required, outside normal duty hours.
- f. Designate, mark, and keep clear fire lanes for access to buildings, fire hydrants, or fire areas as requested by the Fire Marshal.

3-7. ASSISTANT CHIEF OF STAFF, COMMUNICATIONS-ELECTRONICS/DIRECTOR OF COMMUNICATIONS/ELECTRONICS, will:

- a. Assist the Fire Marshal in planning fire reporting communication systems; provide, install, and maintain the signal facilities authorized; and coordinate with commercial communication companies, as required to assist expeditious handling of fire reporting and traffic control.
- b. Publish an Standard Operating Procedures (SOP) for communications operating personnel to implement instructions prescribed for transmission of fire reporting and traffic control.
- c. Publish an SOP for providing photographic services as requested by the Fire Marshal in connection with fire investigations.

3-8. RANGE FIRE MARSHAL. The Range Office will:

- a. Appoint a Range Fire Marshal for the duties listed in 6-7b, below. The Range Fire Marshal, unless the duty is definitely assigned elsewhere by the Installation Commander as an exception hereto, will be responsible for all fire prevention and protection activities in all portions of the reservation outside the cantonment area. Areas included in his responsibility are those required for maneuvers, field exercises, bivouacs, and range firing, and also any areas outside the reservation in use for field exercises of any type other than large scale named maneuvers.
- b. Be responsible for preparing and keeping current accurate maps of impact areas. Reservation Boundary Maps (Basic Information Series) will be used for this purpose.

Section II. FIRE PLANS

3-9. DEFINITION. A fire plan is required for each building other than private quarters. Heads of households, particularly those with small children or members who are incapacitated or partially incapacitated, are strongly urged to develop and practice fire plans for their quarters. The primary and governing objective of these plans is the safety of the occupants, and no plan should require action which exposes them to possible death or injury. An exception is that persons having custody of others under restraint (confinement officers, stockade guards, ward members of psychiatric or detention wards, or attendants with nonambulant patients) are expected to give first consideration for the safety of their charges. Details of the plans will vary, but each will contain the common elements listed in 3-10, below. The Area Fire Marshal is responsible for the formulation of the plan and for training building occupants, including necessary drills, to insure its effective implementation.

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3-10. **ELEMENTS OF FIRE PLANS.** Each fire plan will include but is not limited to the following features: (Attached, as Figure 3-2, is a sample fire plan).

a. **Training of Personnel.** Train all personnel to transmit an alarm to the fire department. This will include the telephone (administrative) and any reasonably available transmitting equipment, such as manual boxes and fire reporting telephones.

b. **Provision of Alarm.** Development of reliable means of alerting building occupants, such as voice alarm, gongs, light signals, etc. In hospitals, places of assembly, and similar occupancies, the method of alarm should be one that will alert attendants before the general alert.

c. **Evacuation of the Building.** A single line drawing evacuation plan will be prepared and posted, showing normal and secondary evacuation routes. All regular occupants of the building will be made aware of these routes. Routes should be selected that are, as nearly as possible, those normally followed in entering or leaving the building and should be adequate for free flow of the traffic expected. All routes should be adequately lighted. Ladder-type exterior fire escapes should be used only as a last resort, and never in drills. Where personnel are available, route monitors should be used; these people will leave the building after the last evacuees. Personnel should be assigned to assist, as necessary, any partially incapacitated person normally in the building. Hospital, nursery, and similar occupancies will base evacuation plans on the Code for Safety to Life from Fire in Buildings and Structures (NFPA No. 101).

d. **Reporting the Fire.** Include specific instructions for reporting the fire to the Fire Department. Example: Go to Building 27000, dial 117, tell the person who answers, "I want to report a fire. The fire is in Building 27002. My name is _____." Do not hang up until released by the Fire Department personnel.

e. **Fire Fighting.** Fire plans will require only emergency fire fighting operations by the building occupants, using first aid fire extinguishing equipment. Provisions will be made for manning the extinguishers and training in their operation. Supervisors will monitor fire fighting by occupants and, at any time it becomes apparent that control is not being effective, will withdraw all personnel from the area. Planning for extinguishment of fires that cannot be extinguished or controlled within 5 minutes by use of first aid extinguishers is the responsibility of the Fire Chief.

f. **Accounting for Occupants.** Definite assembly points for evacuees should be set up to allow a head count to insure all persons are out of the building. Building search should be made in occupancies having numerous rooms and places where the occupant is relatively isolated and might not be aware of an alarm. Search should be conducted on the buddy system, where two members remain outside and give the searchers a definite time to cover a predetermined route. If the searchers fail to return on time, the second set of searchers travel the identical route.

g. **Coordination with the Fire Department.** One individual and an alternate, competent and authorized to make decisions for and commit the activity, should be designated to assist in fire prevention inspections or to receive the report. An individual also should be designated to meet the responding fire equipment and furnish them information as to the location of the fire; any unusual conditions in the fire area; or any special precautions required for safe entry to the fire area. He/she should be stationed along the response route, obtainable from the Fire Chief, and any reports of missing personnel or information of value to the Fire Department should be channeled through him.

h. **Salvage of Contents.** Arrangements will be made, including assignment of responsibilities, for security, preservation, and rehabilitation of building contents. This portion of the plan will include complete or preliminary cleaning, drying and any other measures necessary to minimize further damage from the fire, smoke, or water. It also will include arrangements for prompt shipment of items to depots or other facilities having capacities for specialized salvage operations.

3-11. **EXCEPTIONS.** Where, in the opinion of the Fire Chief, preparation and posting of evacuation plans would serve no useful purpose, the requirement may be waived for:

a. Infrequently occupied buildings, such as dead storage warehouses.

b. Single room structures less than 1,500 square feet in area.

c. Buildings housing 10 or less persons where the exits are obvious and readily accessible.

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3-12. CLEANUP.

- a. Provisions should be made for the presence of responsible personnel during the cleaning of the premises after the fire.
- b. Contents of desks, cabinets, etc., should be examined and any documents or papers dried.
- c. Machines of all types should be examined, dried, and oiled
- d. Electrical equipment should not be connected or used until examined and released by a competent electrician.
- e. Arrangements should be made for temporary custody of property removed to prevent further damage.

SECTION III. STANDING OPERATING PROCEDURES
FOR AREA FIRE MARSHALS

3-13. RECORDS. Records required are the individual building inspection records, evacuation drill records, and fire extinguisher inspection records.

a. The building inspection record will be kept on FH Form 2195 (Fire Prevention Building Inspection Record). This is a continuing record and will be transferred with the building. Records will be filed in the Area Fire Marshal's Office, immediately available for inspection.

(1) In addition to the identifying and descriptive data on the face of the card, the building plan will show location and type of extinguishers and location of any areas such as smoking, hot work, flammable storage, requiring special designation or approval.

(2) The back of the card will be used to enter dates of inspections, deficiencies found, date correction completed and initials of the person inspecting, dates of spot inspections by the Fire Marshal or Fire Department representatives, and by the Area Fire Marshal, and initials of the inspector, and dates of any special reports.

b. Drill records will be maintained on the back of the FH Form 2195, and will consist of dates and evaluation. Only unit drills and area drills will be recorded.

c. The fire extinguisher inspection record will be maintained on the DA Form 253, Fire Extinguisher Record, (Tag) attached to the extinguisher, and will reflect the date of the monthly inspection of the device. The entry will be initialed by the Subordinate Fire Marshal.

3-14. REPORTS.

a. No routine written reports are required. The requirements of paragraph 2-6, AR 420-90, are satisfied by compliance with 3-13, above, and b, below.

b. Special reports, in memorandum form, will be prepared when conditions are found which cannot be corrected within the scope of authority of the person to whom the condition is reported (exempt report, paragraph 7-20, AR 335-15, Management Information Control System). Routing will be through the Area Fire Marshal for action or submission to the Fire Marshal, as appropriate. Copies of special reports will be retained by the Subordinate Fire Marshal.

3-15. FIRE PLANS.

a. Building fire plans (Figure 3-2) will be posted in the building they cover, and on the floor for which they are intended.

b. Unit fire plans will be retained by the Subordinate Fire Marshal.

c. Area fire plans will be retained by the Area Fire Marshal.

d. Copies of fire plans will not be sent to the Fire Marshal, but plans will be approved when possible during routine or spot inspections by the Fire Marshal or Fire Department inspectors; absence of approval will not affect the validity of the plans.

3-16. ASSISTANCE. Assistance in initial preparation of FH Form 2195 and technical assistance in preparation of fire plans may be obtained from the Fire Chief, on request.

SECTION IV. FIRE INSPECTIONS

3-17. INSPECTION FREQUENCY. Fire prevention inspections and services shall be conducted within the following intervals:

a. Occupied Buildings. Occupied buildings, excluding family quarters and public assembly, within physical boundaries of the installation shall be inspected every 3 months.

b. Public assembly buildings and hospitals. Hospitals, clubs, theaters, gymnasiums, auditoriums, and other places of public assembly shall be inspected monthly or more frequently if conditions dictate. Also, child day care facilities shall be inspected weekly.

c. Family Quarters. Family quarters shall be inspected annually. This inspection may be conducted as a part of the annual "Fire Prevention Week" activities or during annual "Spring Cleanup". However, local conditions may require scheduling of inspections at other times.

d. Vacant and Secured Buildings. Vacant and secured buildings within physical boundaries of the installation shall be inspected annually. This shall not be construed, however, as precluding a need for an overall visual inspection of the general area in which such buildings may be located at more frequent intervals. When evidence of trespassing or unauthorized entry to such buildings is noted, a full fire inspection of the affected building shall be made at once and the building resecured.

e. Supported activities. Tenant activities which receive facilities engineering support and are located within physical boundaries of the installation shall be inspected at the same intervals as other buildings on the installation.

f. Other Support Activities. Subinstallations, activities (i.e., USAR Centers) or other facilities outside the boundaries of the installation at remote locations, but which receive facilities engineering support from the installation, shall be inspected at least annually. Fire Department Inspection Checklist - US Army Reserve Centers, FORSCOM Form 252-R, will be completed in duplicate at the time of the inspection the duplicate copy of the inspection will be furnished to the Reserve Center Commander or officer in charge, and the original will be kept by the supporting installation for use at the time of the next inspection. Fire prevention inspections of Reserve Officers Training Corps (ROTC) units are not generally required since such facilities are neighbor-owned or leased by the Government. A camera-ready copy of FORSCOM Form 252-R is available from the local facilities management office for local reproduction. Form will be reproduced on 8 1/2 x 11 paper.

g. Outdoors Areas. Inspection of outdoor areas adjacent to buildings, including examination of fire hydrants in the immediate areas, shall be done in conjunction with fire prevention inspections of each building. Outdoor, open lot storage areas shall be inspected at the same intervals as required for buildings.

h. Interior Fire Reporting Systems. Automatic sprinkler system attachments, automatic code transmitters, heat responsive devices of heat detection, and deluge sprinkler systems shall be inspected every 90 days. Automatic sprinkler system attachments and automatic code transmitters shall have a full operating test every 90 days. Fire evacuation alarm system shall be operated during the regular fire inspection of the buildings.

i. Fire Extinguishers. All fire extinguishers shall be maintained, as prescribed in TM 5-687 and NFPA No. 10, and serviced during each regular fire prevention inspection. Condition of the extinguisher, hose, nozzle, etc., shall be checked. Any extinguisher showing signs of damage, discharge, or other deficiencies shall be removed, and taken to the nearest fire station for service, repair and/or recharge, as necessary, and returned to its assigned location. Transportation to and from the fire station shall be by using troops or activity. Carbon dioxide or carbon dioxide actuated extinguishers shall be weighed and/or recharged annually and when other conditions warrant. Each extinguisher shall have a properly maintained tag (DA Form 253) attached, except tenant activities on other than Army installations may adhere to the policies of the host organization, i.e., on college campuses, air force or naval installations, etc.

j. Fire Protection Systems. All sprinkler systems shall be visually examined during each regular building inspection and shall be tested, operated, and maintained, according to TM 5-695 and NFPA No. 13. Alteration to buildings may require changes to or extensions of existing sprinkler systems to maintain proper operation coverage according to NFPA No. 13. Special extinguishing systems, such as carbon dioxide, dry chemical, and Halon also shall be examined during each regular building inspection. Carbon dioxide cylinders shall be weighed annually or when evidence of tampering is present and recharged when weight loss exceeds 10 percent of net weight.

3-18. INSPECTIONS BY AREA FIRE MARSHALS. Area Fire Marshals are responsible for the following inspections and closing procedures (other occupants are responsible for reporting any observed violations or hazardous conditions to him):

a. Visual inspection of all first aid fire fighting and automatic fire protection equipment in the building, and for reporting to the fire department any broken seals, discharged extinguishers, and any other conditions which might impair the full usefulness of the equipment. Inspections of first aid equipment will be recorded by dating and initialing the tag attached to the device at least once every 30 calendar days.

b. Completion of before closing inspections and for recording the names of persons making the inspections. Before closing inspections will insure:

- (1) Secure closure of all fire doors.
- (2) Removal of all trash and waste.
- (3) Closure of fuel supply and dampers to all manually controlled heating equipment.
- (4) Disconnection of any dispensers and appliances not authorized for 24-hour service.
- (5) Extinguishment of latent sparks or removal of hot slag in areas where welding or gas cutting operations have been conducted.
- (6) Close inspection of furniture for latent sparks or coals from smoking material, including examination under cushions, etc.
- (7) Elimination of possible ignition sources in soiled linen hampers and similar containers.
- (8) Closure of any authorized containers for flammable liquids and removal of such containers when required.
- (9) Elimination of any other hazardous conditions peculiar to the building or operation.
- (10) Proper storage of equipment in required storage area.
- (11) FH Form 668, Before Closing Inspections, will be destroyed the day after the date of the last entry.

3-19. INACTIVE BUILDINGS. No person will enter an inactivated building for any purpose without the written approval of the Fire Marshal. Upon completion of the visit, a final closing inspection will be made by the fire department and the building secured. The person holding the entry permit will be responsible for arranging for and facilitating the closing inspection.

BUILDING FIRE PLAN

BUILDING NO. _____

IN CASE OF FIRE

DIAL 117

DATE _____

1. FIRE PREVENTION.

a. The unit Fire Marshal is _____, telephone number _____. The Building Fire Warden is _____, telephone number _____.

b. The Unit Fire Marshal will insure all personnel are orientated completely and fully on this Fire Prevention and Suppression Plan and the Personnel Evacuation Floor Plan. These plans must be posted in an appropriate conspicuous location.

c. Fire inspections will be as follows:

(1) Daily: The Building Fire Warden will make a fire inspection of the building.

(2) Monthly: The Unit Fire Marshal will inspect all buildings for fire hazards and extinguishers for serviceability.

2. ORGANIZATION FOR FIRE FIGHTING.

EXTINGUISHER TEAM

(Name)

(Extinguisher Number)

- 1. _____
- 2. _____
- 3. _____

EVACUATION TEAM

(Name)

(Duties Assigned)

- 1. _____
- 2. _____
- 3. _____

TRAFFIC CONTROL TEAM

(Name)

(Duties Assigned)

- 1. _____
- 2. _____
- 3. _____

3. ACTION IN CASE OF FIRE. Any person discovering a fire, regardless of type or size, will immediately take the following actions:

a. Notify all personnel in the building that there is a fire by sounding local alarm, shouting in a loud voice "Fire", or using fire gong.

b. Go to the nearest telephone and dial 117. When fire station attendant answers, give your name, state that you are reporting a fire, and give full details. Remain on the line until released by the person receiving the call. Carry out any instructions given by the fire station attendant.

c. Upon sounding of fire alarm, teams designated in paragraph 2, above, will take action as indicated below.

Figure 3-2

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(1) Extinguisher Team. Personnel will man their assigned fire extinguisher and proceed immediately to the scene of the fire and exert every effort to extinguish it with their assigned first aid fire fighting equipment. In the event the fire is in a closed or locked building, room, or compartment, no attempt will be made to enter or open the fire area, except for the rescue of trapped personnel. The Building Fire Warden will monitor fire fighting by the extinguisher team and, at any time it becomes apparent that control is not being accomplished, it will withdraw all personnel from the danger area. Fires that cannot be extinguished or controlled within five minutes by use of first aid extinguishers are the responsibility of the Fire Chief.

(2) Evacuation Team. Close all windows and doors, except the doors used as emergency exits, and shut off all electrical fans; electrical circuits, and lighting. Evacuate the buildings to the assigned evacuation point, and stand by for further instructions from the Fire Warden or Fire Chief.

(3) Traffic Control Team. Alert all personnel in adjoining buildings of the existing fire. Conduct a head count to insure all personnel are out of Building _____, except personnel assigned to the extinguisher team. The Building Fire Warden accounts for and directs the actions of the extinguisher team. Stand by to meet the responding fire equipment and furnish them information as to the location of the fire, any unusual conditions in the fire area, or any special precautions required for safe entry to the fire area.

(4) Unassigned Personnel. Personnel not assigned to a fire fighting team or mission will immediately assemble at their assigned evacuation points and stand by for head count and any further instructions from the traffic control team.

4. CLEANUP DETAIL. All assigned personnel of Building _____ will participate in cleaning of the premises after the fire. This will include, but not be limited to, the following:

- a. Contents of desks, cabinets, etc., will be examined and all documents or papers dried.
- b. Machines of all types will be examined, dried, and oiled.
- c. Make sure all electrical equipment involved is not connected or used until examined and released by a competent electrician.
- d. Arrangements will be made for temporary custody of property removed to prevent further damage.

Fire Warden

NOTE: Above fire plan is to be used only as a guide with particular care to incorporate all items listed in Paragraph 3-11.

CHAPTER 4

INVESTIGATION OF FIRES AND REPORTS

SECTION I. INVESTIGATION OF FIRES

4-1. SCOPE. This section outlines requirements for technical investigation of fires and minimum standards for the scope of the investigation. It also outlines duty assignments and provides for delegation or assignment of authority required for efficient investigative operation.

4-2. GENERAL. Duty assignments to individuals herein are based on general practice and for convenience, but are not mandatory, and may be varied as desired.

4-3. REQUIRED INVESTIGATIONS.

a. The Fire Marshal or his assistant will investigate each fire to determine the cause of the fire; the underlying reasons for the existence of cause; the amount of the loss; the person or persons immediately responsible for the fire; violations, if any, of existing regulations; supervisory laxity at any level; and action required to prevent occurrence of fires from similar causes. In cases where privately owned property is damaged or destroyed, possibility of a claim against the Army will be determined.

b. Fire in Vehicles.

(1) Investigations of equipment fires will determine if the fire was caused by a preventable equipment malfunction and, if so found, to determine the individual responsible for allowing the conditions to exist.

(2) Procedures for investigation of fires in vehicles will be done by qualified maintenance personnel to determine the immediate cause of the fire, and a background investigation of operator or maintenance malpractice resulting in the fire and the chain of responsibility therefor.

(3) The Chief, Maintenance Division will insure that competent personnel are available for investigation of vehicle fires and insure timely preparation and submission of the report of investigation to the Fire Marshal. Report will be submitted in narrative form in four copies (Exempt report, paragraph 7-2t, AR 335-15, Management Information Control System).

(4) The report of the maintenance investigation will be submitted as a supporting document to the Fire Report (DA Form 3985).

4-4. INVESTIGATIVE AUTHORITY. For the purpose of conducting technical investigations of fires, the Fire Marshal and his assistant will:

a. Be designated Summary Court Officers and, as such, may administer oaths and take sworn testimony.

b. Be authorized to assume custody of any property considered of value as evidence of the cause of the fire or of the identity of the person or persons responsible for the fire.

c. Receive assistance from the Provost Marshal, when requested, for interrogation of witnesses, or for the use of the polygraph where permissible.

d. Have authority to summon any person on the installation for the purpose of obtaining the information or evidence concerning the fire. Such summons will be honored without delay, except cases of physical incapacitation.

e. On request, be furnished photographic service by G3/DPT, TASC during normal duty hours, or by the Provost Marshal at other times. In cases where death or injury occurs, photographs will be made before removal, if possible.

f. In coordination with the Deputy Installation Commander, determine the need for a Board of Officers or independent investigating officer and, when appropriate, furnish the Adjutant General with the information required for preparation of the necessary orders.

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4-5. REPORTS OF SURVEY. Surveying officers will be furnished a complete copy of the Preliminary Fire Report of Technical Investigation for consideration and guidance.

4-6. ASSISTANCE FROM OTHERS. Any element of this command, on request, will furnish such assistance and facilities as may be available. Any person having knowledge which might assist in determining the cause of or responsibility for the fire is charged with the duty of furnishing such information to the Fire Marshal without delay, whether or not requested.

4-7. REPORTS OF TECHNICAL INVESTIGATIONS (Exempt Reports, paragraph 7-2t, AR 355-15). Reports of Technical Investigations will be made according to FORSCOM Regulation 420-24.

4-8. ACTION AND STAFFING, REPORTS OF TECHNICAL INVESTIGATIONS.

a. The Fire Marshal will inform the unit commander concerned of the technical investigation, afford him an opportunity to consider the supporting evidence, and request action for fixing liability and disciplinary measures, if warranted by the circumstances. In cases where disciplinary action has not been taken, the unit commander will prepare the necessary explanatory document; obtain the appropriate approval and signatures; and deliver it to the Fire Marshal within 2 working days following the receipt of notices of the findings, unless granted additional time by the Fire Marshal.

b. The Report of Technical Investigation, along with the statement required by a, above, will be sent to the Inspector General with the final report for concurrence or comments and any staffing required with other staff sections. The Inspector General will forward the completed report for appropriate signature and dispatch to the Commander, FORSCOM, ATTN: AFEN-FP.

SECTION II. FIRE REPORTING REQUIREMENT

4-9. PURPOSE AND OBJECTIVE. This chapter provides guidance in addition to that contained in AR 420-90, pertaining to reporting fires using DA Form 3985. The objective is accurate and concise reporting of fire losses and factors associated therewith. In addition, a DA Form 285, United States Accident Investigation Report, will be submitted when the Army loss is \$300 or more--death, or lost time injury.

4-10. REPORTS OF FIRES AT SATELLITED ACTIVITIES. All fires in off-post facilities, regardless of the amount of loss or ownership of the facility occupied, will be reported immediately by telephone or teletype to the Fire Marshal or Staff Duty Officer of the supporting installation, who will initiate any further action or investigation required. DA Form 285 covering fires will be submitted independently of the fire report. Off-post facilities will forward the Accident Report to the Commander, ATTN: Safety Director, of the supporting installation.

4-11. PREPARATION OF FIRE REPORT. Fire reports will be prepared according to AR 420-90 and FORSCOM Regulation 420-24.

4-12. MANEUVER OR EXERCISE FIRE REPORTS.

a. The unit commander will prepare the preliminary report on DA Form 3985 in four copies or in five copies when the home station of the unit is outside the FORSCOM AREA. The report will be sent to the Maneuver Fire Marshal by messenger within 4 hours after the incident. When facilities for preparation of multiple copies are not available, a single legibly written copy may be sent. Preliminary reports will contain all information available, but will not be withheld for completion of the investigation or confirmation of the contents. Signature of the preparing officer and complete unit identification will be placed in Block 32 immediately above Item 35.

b. The Maneuver Fire Marshal will initiate any necessary investigation action and deliver the report in triplicate or quadruplicate, as applicable, to the Fire Marshal the same day as received.

c. The Fire Marshal will immediately assign an identifying serial number and process the report according to 4-17, below, except that in cases where the home station of the unit involved is located outside the FORSCOM area, an information copy will be furnished the Commanding General of the appropriate Army Headquarters and the original so annotated.

4-13. FINAL REPORTS.

a. Final reports will be prepared and routed the same as the preliminary reports. The requirements of 4-17, below, are applicable.

b. The unit commander is responsible for action necessary for fixing liability and for taking disciplinary measures, if warranted by the circumstances, and for advising the Fire Marshal concerning final action, including cases where action is concluded outside the FORSCOM area.

c. Where the technical investigation determines responsibility for the fire, the Final Fire Report will include a statement of the disciplinary action taken, if any, and action taken for collection of the loss. Where disciplinary measures are not imposed and reimbursement for the loss has not been initiated, either or both, the statement will be signed by the reviewing officer designated in Section III, below.

4-14. DUE DATES OF REPORTS.

a. Off-post Facilities. Telephone or teletype report to the Fire Marshal or Staff Duty Officer of the supporting installation will be made with a minimum delay by the senior officer or noncommissioned officer having knowledge of the fire.

b. DA Form 3985. Where the Army loss is \$250 or more, or a death or lost time injury results, the report will be dispatched not later than 10 working days following the incident where the report cannot be completed in this time, the initial report will be marked "Preliminary" in the upper right corner of the DA Form 3985, and the Final Report dispatched within 31 calendar days following the date of the incident.

4-15. AUTHENTICATION OF FIRE REPORTS (DA FORM 3985).

a. Item 35. The Fire Marshal or his assistant will sign all reports as the reviewing authority.

b. Item 36. Final Reports, where disciplinary measures have not been imposed or liability fixed and statement is included in Item 32, rather than as a separate statement, will be signed according to Section III, below.

4-16. ROUTING OF FIRE REPORTS. Reports of fires in off-post facilities will be reviewed by the supporting installation commander for technical adequacy and forwarded with comments to the Commander, FORSCOM, ATTN: APEN-PP, within 48 hours.

SECTION III. REVIEW OF FINAL FIRE REPORTS

4-17. PURPOSE. Command support of the Fire Prevention and Protection Program is essential if the desired results are to be obtained. The procedures herein are for the purpose of providing the Commander, FORSCOM, with record evidence of this support.

4-18. REVIEWING OFFICER.

a. At installation level.

(1) The Installation Commander will personally review all fire reports involving a death or loss in excess of \$10,000.

(2) The Installation Commander or a senior member of his command group will personally review all fire reports.

b. At Intervening Command Level. When the Installation Commander uses a subordinate or tenant commander to conduct any portion of the investigation, the reply will be reviewed by:

(1) The subordinate or tenant commander if the fire involved a death, a loss in excess of \$1,000, or a waiver of punishment or liability. If the commander is a general officer, this review may be delegated to another general officer or a senior member of his command group.

(2) Any designated staff officer in all other cases.

4-19. REVIEW. The reviewing officer must satisfy himself that the cause and responsibility for the fire have been adequately investigated; that appropriate and adequate disciplinary action has been taken if warranted by the circumstances. He will indicate his satisfaction in these respects by a signature on the report itself or on a transmitting document. Only one manual signature is required. The document signed by the reviewing officer will either include or specifically indorse one or more of the following statements.

a. If responsibility has not been fixed, a statement that the fire is considered an act of God or that further investigation would be fruitless.

b. If responsibility has been fixed and disciplinary or pecuniary liability imposed, a statement of the action taken.

c. If responsibility has been fixed and disciplinary action or pecuniary waived, a statement of explanation should be submitted.

CHAPTER 5

FIRE PREVENTION, VEHICLES

5-1. **APPLICABILITY.** This chapter applies to all vehicles, including armored and self-propelled combat vehicles.

5-2. **GENERAL.**

a. Loss or disablement of a combat vehicle by fire, represents the same reduction of striking power as loss due to enemy action.

b. Fires in combat vehicles are generally due to one or more of the following avoidable conditions.

- (1) Overfilling of fuel tanks.
- (2) Spillage due to excessive filling rates.
- (3) Leakage into engine compartments from defective fueling equipment.
- (4) Operation of vehicles with leaking fuel, lubrication and exhaust systems.
- (5) Operation with appreciable accumulation of fuels, lubricants and extraneous combustible materials in engine compartments.
- (6) Fueling or parking with hull drains closed, allowing leakage accumulations in vehicle.
- (7) Failure of crews to initiate adequate emergency measures for control of fires.
- (8) Poor maintenance on the vehicle, both to fuel systems and cooling systems.

5-3. **FIRE PREVENTION AND CONTROL.**

a. Drivers of the receiving vehicle will exercise extreme caution in fueling to prevent overfilling and spillage and will not allow use of refueling equipment that is leaking or otherwise in an unsafe condition.

b. Drivers will position fuel supply vehicles, so that refueling hoses do not cross engine compartments or hatches, using extra lengths of hose if necessary.

c. Drivers of fueling vehicles will insure that static control devices, such as grounding and bonding connections, are made in proper sequence before fuel transfer. Use of lock-open type nozzles of any type is prohibited. Nozzles having lock-open devices will be modified to positively prevent use of the devices.

d. Drivers of the receiving vehicle will open all hull drains before and during fueling operations and at any time the vehicle is inoperative overnight or longer. When hull drains are opened, and during fueling operations, the vehicle commander will check carefully for leakage of lubricants or fuel.

e. Drivers will check carefully for and promptly report any fuel or lubricant leaks when performing before operation, at halt, and after operations inspection.

f. Engine compartments will be cleaned whenever there is evidence of excessive accumulation of combustible matter or fuel or lubricant leaks, removing power plant if necessary. The vehicle commander will deadline the vehicle pending cleaning or repair if a fire hazard exists.

g. Cleaning operations that involve use of combustible solvents will comply with 2-33f, above.

h. Procedures for clearing hydrostatic locks will include measures for prevention of ignition of the expelled fuel.

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i. Commanders will schedule periodic fire drills for combat and fueling vehicle crews to insure thorough familiarity with fire extinguishing methods and capability for applications. Drills will include de-energizing of electrical systems, manipulating hull drain valves, simulated activation of installed and hand-operated extinguishers, and rescue of incapacitated crew members. Higher level commanders should call unannounced fire drills in the motor pools and during field operations.

j. When any type of trouble light indicates trouble, the driver will immediately:

- (1) Stop vehicle.
- (2) Turn off ignition and all power sources until the trouble is located.
- (3) Not move the vehicle (unless towed) until the trouble is resolved.

k. Commanders will insure that heat shields, shrouds, and other cooling system parts are in operational condition and installed properly before vehicles are operated.

l. Not used.

m. Drivers of vehicles having catalytic converters will not leave the vehicle running when not in motion. Due to the excessive heat, the converter will set the grass (if off the road) on fire and possibly cause the mat on the vehicle floor to catch fire.

CHAPTER 6

RANGE AND BIVOUAC FIRE REGULATIONS

6-1. **APPLICABILITY.** This chapter applies to all portions of the reservation outside the cantonment area, and to any area outside the reservation in use for field exercises of any type other than large scale named maneuvers. All FORSCOM directives and policies apply, regardless of the home stations of personnel.

6-2. **ALARMS OF FIRE.**

a. Any person discovering a fire in the range or bivouac area will immediately notify the fire department and Post Range Office by the most expeditious means; radio, messenger, telephone, or any combination thereof. The person using the radio or a telephone will preface his call with the words, "Fire Alarm", repeated three times. All channels will be cleared at this signal. Messengers on foot will be given transportation by any vehicle driver to the nearest radio or telephone transmitter, regardless of the driver's original mission or assignment. Pilots of aircraft and drivers of vehicles will be particularly alert for signs of fire. Any person, on discovery of a fire, will interrupt any mission until transmission of the alarm and acknowledgment of its receipt, unless interruption of the mission would jeopardize life. Radio silence will be broken for this purpose.

b. After transmitting the alarm, every effort will be made to extinguish the fire with improvised equipment, but extreme care will be exercised to avoid risk of life or injury.

6-3. **FIRE PREVENTION.**a. **Responsibility of commanders.**

(1) Commanders will insure that personnel in their commands are alert in detecting and reporting fires and are aware of the consequences of neglect or carelessness which results in a fire.

(2) Commanders of units stationed in the cantonment area will thoroughly familiarize themselves with this regulation.

b. **Smoking.** Extreme care will be exercised in disposal of smoking materials. When out of doors a space will be cleared through the surface litter down to mineral soil. Cigars, cigarette butts, or pipe ashes will be placed in the cleaned spot and ground into the soil until out. Ashtrays will be used when driving and in no case will burning material be thrown from any vehicle. Smoking is prohibited in any vehicle carrying cargo and within 50 feet of any storage area. Butt cans will be provided in bivouac areas, and will be dumped daily into a pit and covered with mineral soil.

c. **Matches.** Only safety matches will be used. After striking, each match will be broken and the burned end felt to insure that it is dead before throwing it away.

d. **Open Fires.** Before building an open fire on the ranges or bivouac, all flammable material will be scraped from an area 6 feet in diameter and a small hole dug in the center for the fire. Fires will be kept small. Fires will never be built against trees or logs or near brush. Open fires will never be left unattended. Before leaving an open fire, coals will be stirred while soaking them with water and all sticks turned and soaked. The fire pit will be covered with 6 inches of dirt free of leaves, twigs, and other vegetable matter. Before covering, a final check will be made of the ash with the bare hand to make sure the fire is out. Clothing will not be hung over or close to an open fire to dry. Where hazardous burning conditions exist, the unit commander will prohibit open fires.

e. **Heating and Lighting Equipment.** Unit commanders are responsible for insuring that heating and lighting equipment is used only by personnel familiar with the manuals pertinent to its operation, inspection, and maintenance; and that the equipment is maintained and inspected for safety and is properly installed and in good operating condition.

(1) Tent stoves, field ranges, sterilizers and other heat producing equipment will be located at least 48 inches from any tent or building wall. When on other than an earth or concrete floor, the equipment will be placed on a piece of sheet metal or in a sand box extending 18 inches beyond the front of the fire box and 6 inches beyond the sides and back. A ventilated space of at least 4 inches will be provided between the equipment and the floor or other support.

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(2) Stoves pipes will be installed, according to TM 10-4500-200-13. No heating equipment will be fired unless all elements of the vent are in good condition and the assembly is complete. Improvised equipment is prohibited. Stove pipes will be dismantled and cleaned, and roof jackets examined once each week.

(3) Reservoirs for gasoline fueled heating equipment or lanterns will not be filled or emptied or have the fill opening cover loosened or removed inside a tent, building, or vehicle. Refueling will not be done within 50 feet of an open flame or any spark producing device, or within 20 feet of any tent, building, or vehicle. No unit will be fueled unless completely cool (the bare hand can be held firmly on any surface without discomfort), and the unit must be wiped dry of any spills before being returned to service. Artificial lighting in the fueling area must be of explosion proof type or must be located at least 20 feet laterally and 4 feet above the fill opening.

(4) Other than as excepted below, no internal combustion engine having an integral tank, or a tank mounted above the engine, will be fueled until completely cooled, and will not be started until wiped free of spills, any spills on the ground are covered with sand; the tank cap is in place; and filling containers are closed. When it is not operationally possible to shut down the engine for cooling, fueling will follow the following procedures without deviation:

(a) A standard gasoline can with a spout will be used, with adequate covers and precautions to prevent dripping on any part of the engine.

(b) Two men will be required for the operation, one to fill and one to stand by with an extinguisher in a position where he can observe the filling point and prevent overfilling.

(c) If natural illumination is not adequate for clear vision, a third man will hold a light or lights, see (3), above, in a position where the filling can be accurately controlled.

(d) Start-up will be according to (3), above.

(5) Lanterns and electric bulbs will be kept a minimum of 18 inches from any combustibles, including walls and ceilings. When suspended, clearances will be measured from all points passed by the lantern or light swinging 90 degrees in any direction from the point of suspension. Lanterns will not be placed on stands or tables, unless both the support and the lantern are secured to prevent overturning.

(6) Flame-producing equipment will not be left unattended while in operation or when not completely extinguished and cooled.

(7) Wiring for electrical lighting will be kept in good condition or removed from use. Extension cords more than 15 feet in length are not permitted (not applicable to standard distribution cables).

(8) Fuel for lanterns and stoves, other than that in the reservoirs, will be stored in tightly capped containers a minimum of 20 feet from any part of any tent, structure, or vehicle parking area.

(9) Heater, space, radiant (oil) (formerly stove, tent, M 1941 and M 1950) will be properly installed, operated, and maintained according to TM 10-4500-200-13. Rigid inspection by responsible commanders after setup of the burner and before igniting is mandatory. Particular care will be taken to insure that the hose from the fuel can adapter is connected to the fitting marked "inlet" on the valve housing. Modification (interchange of fittings on hose and control valve housing) is unauthorized and highly dangerous. For gasoline fired, duct type, portable heaters, size 250,000 BTU (such Herman Nelson Model GT 3077), the safety precaution and operation procedures set forth in TM 10-4520-201-14, are applicable and will be complied with.

f. Tents.

(1) Tents will be spaced as follows: Six-man tents will be in a row with 8 feet of clearances on all sides, two rows may be grouped 8 feet apart. Thirty feet of clearance is required between each group of two rows. A minimum clearance of 30 feet is required on all sides of larger tents.

(2) Police of tent areas will be maintained at a high standard. Grass and vegetation will be cleared or cut to not more than 2 inches high within 3 feet of tents up to and including squad tents, and within 10 feet of larger tent.

(3) Tents are not fire resistive but are flameproofed to prevent rapid burning. This in no way lessens the necessity for care in smoking and use of flame producing devices, as damaged beyond economical repair is possible without actual destruction by fire.

g. Vehicles.

(1) Vehicles will not be parked within 10 feet of any tent or storage stack. When vehicles back up for loading or unloading, a fire watch will be stationed who will not only be alert for any fire during the operation but also will examine the area thoroughly for any latent sparks not less than 10 minutes or more than 20 minutes after the departure of the vehicle.

(2) Vehicles stopped for any reason in area containing vegetation will not be left unattended until the exhaust is completely cooled or unless all combustible material is cleared from the vicinity of the exhaust system.

(3) Before starting or restarting any vehicle, thorough examination of the vehicle and of the ground under and around it will be made for detection of fuel leaks.

(4) Except for loading and unloading, vehicles will not be stopped or parked in required fire separations. When stopped in fire separations, vehicles must be constantly attended or kept 50 feet apart at all times.

(5) In the event of a fire, both military and civilian fire fighting vehicles will be given priority on the roads and the roads cleared for them. In most cases, the vehicles will be prominently identified by a red and white checkered flag or by red lights and sirens, but in the event they are not, the word of the driver will be accepted and every assistance furnished.

h. Storage Areas.

(1) Storage areas will be selected at sites having minimum vegetation. Grass and brush will be removed or cut and kept at not more than 2 inches in height within the area and for a space of 20 feet around it.

(2) Storage piles will be limited to 6 feet in height, 10 feet in width, and 20 feet in length. A separation of 10 feet will be maintained between the ends of the stacks and a fire lane 20 feet wide maintained between the long sides.

(3) One 2 1/2 gallon water pump fire extinguisher will be provided for each four piles of dry storage. These extinguishers will be hung on posts on alternate sides of the fire lane at or near common point of the four piles.

(4) Petroleum, oil, and lubricant storage areas will maintained in strict accordance with FM 10-68 and FM 10-69. One 50 pound, wheeled type CO₂ extinguisher will be provided for each 15,000 gallons of storage.

(5) Special caution signs will be posted when the nature of the storage so requires.

(6) The area will be thoroughly policed daily and all rubbish and trash removed to the disposal pit.

(7) Reusable containers will be stored in separate piles. Containers which have contained flammable liquids will be kept tightly closed and stored in the POL area.

i. Flares and Smoke Grenades. Personnel using or in the area where flares or smoke grenades are used or dropped will locate the remains of the devices and take necessary action to completely extinguish any burning residue or to render harmless any hot particles.

j. Camouflage. Camouflage includes all materials and devices for concealment from air or ground observation, including nets and foliage.

(1) Camouflage will not be installed within 1 foot of any vehicle muffler or exhaust system or any other surface which may be heated under normal operating conditions. Material near such surfaces will be securely fastened in place.

(2) Engines of camouflage equipment will not be started until an inspection has been made to insure that all combustible material is clear of the exhaust and its discharge.

(3) Frequent inspections will be made of camouflage to insure mooring of the material and that movement by wind or of mooring points will not allow parts of the material to drop on a hot surface.

(4) Open flames of all types, including cooking equipment, will be kept 5 feet or more from any camouflage material.

k. Fire Guards. Unit commanders will provide fire guards or patrols for 24 hour surveillance of all accountable property in each bivouac and supply area. Guards will be of sufficient numbers to keep the entire area under surveillance.

6-4. FACILITIES FOR FIRE ALARMS. The communications officer for the range or exercise will establish and maintain reliable channels for transmission of alarms to the Installation Fire Department. He will instruct all operators to give top priority to any communication prefaced with the words "fire alarm" and to route or relay such messages without delay to the Fire Department or to the Maneuver Headquarters, as appropriate.

6-5. ACTION ON RECEIPT OF FIRE ALARM. Except in large scale maneuvers where a separate alarm headquarters is set up by the Installation Commander, all fire alarms will be transmitted as directly as possible to the alarm operator at the Central Fire Station. The alarm operator at the Central Fire Station will:

- a. Dispatch the second ranking fire officer with fire fighting equipment to the fire.
- b. Notify the following:
 - (1) Fire Marshal.
 - (2) Military Police Desk Sergeant.
 - (3) After duty hours, Corps Operations Center (COC).

6-6. FIRE FIGHTING OPERATIONS.

a. The ranking fire officer will size up the fire, using air reconnaissance, if feasible. Upon completion of the size-up, he will:

- (1) If the fire is minor, issue any necessary instructions to the responding Fire Department Officer and report to the Fire Marshal.
- (2) If the fire is of serious proportions or likely to become so, make a verbal report to the COC, which will include description of the situation, number of fire fighters required, and the need to stop firing or to stop the play of the maneuver.
- (3) Advise the alarm watch of the exact location of the fire and the route to be followed in reaching it.
- (4) Take personal charge of the operations.

b. The Fire Marshal will accompany the fire officer on the size-up of major fires and assist him in carrying out fire fighting operations. He will, on request of the Fire Chief, request the COC to dispatch the men and equipment needed for assistance.

c. The Range Fire Marshal will immediately proceed to the fire and take charge of operations until the arrival of the Fire Department. He will report results of ground investigation of the fire to the fire officer.

d. G3/DPT will issue "cease fire" instructions when requested to do so by the Fire Chief or Fire Marshal. He will ascertain the availability of troops affected by the order and coordinate with the appropriate commander.

e. The Military Police, upon notice from the G3/DPT, will dispatch two 2-man details in two-way radio equipped jeeps to the central alarm headquarters for instructions as to location and designation of the alerted company and the location of the fire and route to be followed to reach it. As soon as the information is received, one detail will join the alerted company and the second will report to the motor pool to serve as guides to the fire company until the motor pool equipment is dispatched or to stand by until the alert is lifted.

f. The officer in charge of the alerted company will contact the unit motor pool for dispatch of equipment and transportation, which will stand by with the company until dispatched to the fire or released by the lifting of the alert. When dispatched to the fire, the officer in charge of the company will report to the Fire Department Officer in charge and assist him in the fire fighting operations.

6-7. DUTIES.

a. The Fire Marshal is responsible for coordination of all fire prevention and protection activities within the reservation range areas. During large scale maneuvers, he will supervise the operations and activities of the Maneuver Fire Marshal.

b. The Range Fire Marshal is responsible for:

(1) All fire prevention and protection activities outside the cantonment area, except during large scale maneuvers when he will act as advisor to the Maneuver Fire Marshal and provide liaison with the Fire Marshal.

(2) Preparation of plans for control of woods and grass fires.

(3) Designation of fire areas outside the cantonment area according to the using commands, and insuring that area commanders appoint Range or Maneuver Area Fire Marshals.

(4) Establishing liaison and preparing mutual aid agreements with civilian fire fighting agencies.

(5) Supervision of the training of Fire Guard Companies.

(6) Furnishing the G3/DPT current information concerning location and designation of duty companies.

(7) Preparing and keeping current maps of impact areas, burned over areas, and firebreaks.

(8) Direction of fire fighting activities until arrival of the Fire Department Officer.

(9) Enforcing fire regulations.

c. Range Area Fire Marshals will:

(1) Be responsible for coordination and supervision of fire prevention and supervision of activities of units under the area commander.

(2) Be responsible for direction of fire fighting activities until the arrival of the Range Fire Marshal or the Fire Officer.

d. Range Unit Fire Marshals will be appointed by commanders of all units down to and including battalion size, and of all detached units, regardless of size. Range Unit Fire Marshals will:

(1) Instruction personnel in the proper method of turning in fire alarms.

(2) Instruct personnel in fire prevention regulations.

(3) Enforce fire regulations.

(4) Instruct personnel in safe and efficient methods of extinguishing fires.

(5) Assume command in the Fire Guard Company upon notice of an alert, and remain in command until the company is released.

e. The Unit Transportation Officer will:

(1) Coordinate all transportation facilities listed in the Emergency Operations Center (EOC) request for assistance.

(2) Maintain a central dispatch office during the emergency and take necessary action to keep one telephone open for the fire.

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f. Communications officers will inform all operating personnel of the requirements for clearing communications channels upon receipt of the fire signal and of the need for expediting such calls. They also will be responsible for lifting the alert when so advised by the Fire Marshal. In the event any person interferes with or interrupts transmission of an alarm of fire, the communication officer will ascertain the identity of that person and furnish the information to the Fire Marshal, who will initiate disciplinary action if indicated.

6-8. SUPPLEMENTARY FIRE FIGHTING SUPPORT.

a. Each Division, 2d Armored Division and 1st Cavalry Division, will furnish on a rotating basis (6 months) fire fighting support in bulldozers, tank dozers, etc., with operators and transportation.

b. Information as to the unit, with telephone numbers and names of the responsible officer, will be delivered to the Central Fire Station and to the EOC not later than 15 days before the beginning day of the time for which the assistance is furnished.

c. In serious fires, maximum use of vehicles in the field area of the fire will be made (tank dozers, bulldozers, etc.). This assistance will be incorporated into their fire plans.

6-9. RESPONSIBILITIES.

a. All fires will be reported by anyone upon discovery.

b. Each unit commander will:

(1) Promptly initiate disciplinary action, if appropriate when a member of his command is found responsible for a fire.

(2) Initiate appropriate survey action. ''

(1) and (2), above. (3) Promptly report to the Range Fire Marshal the final results of the actions in

(4) Make available to authorized investigators any personnel required for testimony or interrogation in connection with a fire.

(5) Insure that military personnel involved in a fire remain under FORSCOM jurisdiction until released by the Fire Marshal.

CHAPTER 7

FLAMEPROOFING TENTAGE

7-1. **APPLICABILITY.** This chapter applies to tents and canvas products used for shelter or protection of individuals, supplies, or equipment. Clothing of all types and anything normally in contact with the skin are excepted.

7-2. **GENERAL.** The original flameproofing, waterproofing, and mildew retarding treatment will not last the life of the tent. Effective life is influenced by many variables, such as weather exposure, i.e., sun, rain, varying degrees of humidity, etc.; frequency of cleaning; and effectiveness of application. As loss of effectiveness of flameproofing cannot be predicted on a time basis or detected by visual inspection, frequent testing is mandatory. Initial implementation of the program requires testing semiannually, but this frequency may be increased or decreased according to local experience. Since the compound used provides mildew, water, and fire resistance in combination, all three maintenance requirements must be considered and the treatment frequency will be the maximum necessary to accomplish all three ends.

7-3. **TESTING.**

a. **Date of Testing.** All tentage in use will be tested for flameproofing annually or before storage, whichever is the earliest. Tentage in depot pack is not considered in use; when received, it will be broken out and the test record (d, below) attached with the date of receipt shown as the test date.

b. **Flameproofing test method (Match Flame Test).** Cut a small sample from a top of the tent, hold the sample in a vertical position, place a match in a horizontal position 1/2 inch below the material at a constant location for a period of 15 seconds. Observe whether the material ignites and flames spread across the surface of the material. Larger tents will be tested at two points remote from each other!

c. **Mildew or Waterproofing Test.** Visual examination or presence of leaks will show deterioration of fungicide or waterproofing treatment.

d. **Test Record.** Test dates will be recorded by attaching a nonferrous metal tag (dog tag) by means of a hog ring to the hemmed edge near the top of the entrance. Entries will be made by stamping the month and year, e.g., 9-78, using numerical stamping dyes. Retreatment dates will include a zero following the year, e.g., 9-780. No other record is required.

7-4. **MATERIALS.**

a. **Material for treatment of tentage** is Mildew Resistant Compound Textile Volatile Solvent Type, Fire and Water Resistant, Paste Form, and is available in 5 gallon drums. It is prepared for use by mixing with equal parts of petroleum solvent (Stoddard Solvent or equal).

b. **Nonferrous metal tages.** No FSN. Local purchase authorized.

c. **Staples, hog ring.** Available Federal Supply System.

d. **Pliers, staple, hog ring, straight nose.** Available Federal Supply System.

7-5. **PRECAUTIONS.** The compound contains a strong fungicide (5.5 to 6% copper naphthenate) and is toxic. The following precautionary measures are mandatory:

a. **Protective devices.** Protective devices will not be improvised, nor will mixing or application of the compound be started until all protective and remedial devices are at hand ready for use.

(1) Both the paste and the solvent produce highly flammable vapors. Any device capable of producing heat, open flames, or sparks must be kept 100 feet from the treatment area during mixing and treating operations and for at least 4 hours thereafter. Spark producing devices include but are not limited to vehicles, lanterns of all types, electric wiring, lamps, and signal equipment. Guards will be posted as necessary.

(2) All treatment will be done outdoors if at all feasible and at locations which will not expose other property to damage if ignited. If treatment is applied indoors, the approval of the Fire Marshal is required before commencing work.

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b. Hygiene.

(1) Clothing accidentally contaminated with the compound will be removed immediately, handwashed with soap and warm water, and thoroughly rinsed. It will not be machine washed until dried after handwashing. Precautions in a, above, will be observed until washing is complete.

(2) Do not treat clothing.

(3) Keep the compound off the skin. If contamination occurs, wash off with soap and warm water immediately. In all cases, wash hands and exposed areas with soap and warm water after using.

7-6. APPLICATION.

a. Clean the tent, removing dirt, oil, and grease stains and allow to dry thoroughly.

b. Apply the mixture with a brush or spray gun. Use a coarse spray followed by brushing petroleum solvent if necessary. Apply generously on patches.

c. The treated fabric will dry to touch in 30 minutes; however, tent will be dried outside for 24 hours before folding or storing.

CHAPTER 8

SHOP FIRE REGULATIONS

8-1. SCOPE. This chapter applies to all types of shops, including aircraft hangars and garages involving the storage, servicing, or repair of three or more motor vehicles, and to all operations, temporary or permanent, Government or contractor operated, where the produced or repaired items are to be used elsewhere, and to similar work in the field.

8-2. HOUSEKEEPING.

a. All litter, trash, sawdust, scraps, and packing material will be kept to a minimum on floors and benches by frequent sweeping during the work day. The entire shop will be broom clean before closing each day.

b. Dust and sawdust accumulations on rafters, truss members, automatic sprinkler piping, and at other locations will be blown down at least once each week, preferably on the last work day, or more often if considered necessary. In cleaning sprinkler piping, only air should be used to avoid damage to the heads. Machines, work tables, and benches will be kept free of accumulations of debris, dust, and lint by frequent cleaning.

c. Buffers and grinders will have dust collection devices discharging into a container or duct system. Bags or containers will be in locations easily accessible at all times and will be emptied daily. Discharge to the open air or under the building is prohibited. Dust receivers or bags on all sanders and similar equipment will be removed, emptied, and turned inside out at the end of each work day. Bags will be racked or hung to permit free air circulation around them. Dust collection systems will be inspected frequently to prevent clogging of the ducts. The collector will be emptied when filled to two-thirds of its capacity. Fans will be kept clean.

d. Motors will be wiped clean of dust and oil not less than twice each week.

e. Waste and trash will be removed from the building at the close of each day's work.

f. Spills will be immediately cleaned up. Benches, floors, and all equipment will be cleaned of noticeable accumulations of the material.

g. Accumulations of scrap, usable or for salvage, will be kept to a minimum.

8-3. STORAGE.

a. Shops will not be used for storage of completed items; all completed work will be removed not later than the end of the work day following that on which the work was completed.

b. Excelsior and similar highly combustible materials will be kept in bales or in metal lined containers with automatic self-closing lids. Dropped materials will be promptly picked up and returned to the container or placed in a trash receptacle.

c. Paint and other materials necessary for marking or stenciling may be kept in the shop, provided:

(1) The total quantity does not exceed 5 gallons.

(2) Paint is in shipping containers capable of being tightly closed, and free of excessive paint on the outside of the container.

(3) Solvents are kept in standard safety cans.

(4) All storage is on an open, nonferrous metal covered shelf, reasonably remote from any source of ignition.

d. Lumber storage will be limited to 3,000 board feet. Stored lumber will be kept stacked in racks well off the floor. Where stock turnover is slow and dust accumulation is noticeable, the material will be removed to the lumber storage shed.

e. The shop working supply of any one type of flammable cement will be limited to the quantity contained in one shipping container.

f. Working stocks of fabrics and materials will be kept in orderly condition.

8-4. PAINTING.

a. All used paint and wiping rags will be kept in tightly covered metal cans. Can will be emptied at the end of each day's work.

b. Brushes, unless clean and dry, will be kept in metal or metal lined cabinets with self-closing tops.

c. Paint solvents, other than those in immediate use, will be limited to one day's supply and will be kept in standard safety cans.

d. Painter's clothing will be kept reasonably clean and stored in ventilated metal lockers. All rags will be removed from the pockets before hanging up. The lockers will be left unlocked to facilitate inspection. Clothing in these lockers will be limited to one change.

e. Containers of paint that have been opened will be kept to the minimum required for the operation. Once opened, containers will not be used for storage unless the lid is secure and tight fitting and all excess paint is wiped from the outside of the container. Storage of containers of paint, on open metal covered shelves is permissible in shops having natural ventilation. Empty paint containers will be disposed of daily.

f. Spray painting.

(1) Spray painting will not be done in any building other than a regulation paint spray room without permission of the Fire Marshal, and then only under such restrictions as he may apply, except that minor touch-up on vehicles and aircraft may be done at any location 20 feet or more from any open flame when the supervisor accepts full responsibility. Minor touch-up is work on any vehicle requiring less than 8 ounces of the material spray.

(2) All paint spray rooms, paint rooms, and equipment will be thoroughly cleaned at the close of each day's work.

(3) Paint spray guns will not be serviced inside buildings other than paint shops.

(4) Paint spraying operations using single pressurized (aerosol) containers may be done in any area, provided reasonable prudence is exercised.

g. Paint mixing benches will be provided with a nonferrous metal top and kept clean of spilled paint.

8-5. BATTERY CHARGING.

a. Battery charging facilities will be located in areas having good natural or properly engineered mechanical ventilation, according to NFPA standards.

b. Shelves or benches will be noncombustible or covered with an insulating and absorption-resisting material.

c. A supply of absorbent for neutralizing acid spills will be kept available.

d. The supply of sulphuric acid in the charging area will be limited to one day's work.

e. Where gasoline motor driving generators are used, the generator unit will be located outside the battery room.

8-6. ACIDS.

a. All bulk storage and use of corrosive acids or oxidizing liquids will be in conformity with standard safety practices.

b. Storage areas will not be established or moved without written notice to the Fire Marshal, except as permitted in c, below.

c. Acid stored in prescribed load list (PLL) storage areas will be kept in original shipping containers and will be limited to the amount needed for the number of batteries in storage.

d. Storage areas will be protected from excessive heat and cold and direct sunlight, and from falling objects or other mechanical hazards that could cause injuries.

8-7. FLAMMABLE LIQUIDS. Flammable liquids, including solvents will be used and handled according to paragraph 2-30, above.

8-8. HEATING.

a. Location of heating units, types of units, and types of vents will be in accordance with NFPA regulations covering the particular occupancy.

b. All flame type heaters will be vented.

c. Improvised heaters will not be used under any circumstances or for any purpose.

8-9. VENTILATION. In buildings where flammable solvents are used and the occupancy involves housing or storage of vehicles or aircraft, natural ventilation will be insured by installing vents at the floor line on the basis of 1 square foot of effective ventilation per 10 lineal feet of exterior wall.

8-10. FUELING. Vehicles or aircrafts will not be fueled inside a building. Fueling of aircraft will be done according to NFPA Standards and FM 10-68.

8-11. HANGARS.

a. All aircraft in hangars will have fuel tanks topped off; batteries disconnected and be effectively grounded. All grounding points will be tested according to current regulations and records maintained.

b. All hangar operations and services will be conducted, according to current regulations.

8-12. HEAT OR FLAME PRODUCING DEVICES.

a. Hot Work. Hot work covers open flames and arc welding or cutting, use of blow torches, plumber's fire pots, and any type of device producing heat or an open flame used at any location, except cooking and space heating appliances, water heaters, and heating devices customarily used in laboratories. Lead soldering, using electrical irons as the only heat source, is not to be used. No building or portion of a building will be used for shop operations involving hot work without express approval by the Fire Marshal after verification of the adequacy of fire prevention and safety facilities. Approved hot work areas will not be changed or expanded or the type of hot work changed from that for which the area was originally approved without approval by the Fire Marshal. PH Form 843, Welding Permit, must be posted in shops where welding operations are conducted and may be obtained through the Post Fire Chief's Office upon verification of safety and adequacy of fire prevention facilities. These permits must be updated annually and will generally be updated during the Post Fire Inspector's scheduled inspection.

b. Welding and Cutting.

(1) Welding and cutting operations will conform to NFPA No. 51 and OSHA Standards 1910.252. Only authorized personnel will be permitted to operate welding or cutting equipment. The permit will be issued only after the individual has demonstrated knowledge and understanding of the safety and fire prevention rules by means of a written examination, his qualifications have been attested to by his supervisor, and the qualifications recorded on the employee's CSC SF 7-B (Employee Record Card) or appropriate personnel record. Supervisors will verify operator's qualification by frequent checks of actual operations, and will rescind or withdraw the operator's authorization in cases where flagrant or habitual disregard of the rules is found. Trainees will work only under the direct supervision of authorized personnel.

(2) Each operator will be responsible for checking all elements of his equipment before each day's use. The check will include, but not be limited to, the condition of the hoses and connections, grounds, regulators, and first aid extinguishing equipment. Operability of all valves, including tank valves, regulator controls, and adjusting valves on the torch will be given special attention. Supervisors will make frequent spot checks to insure observance of this requirement. In shops where more than one operator may use the equipment, a definite assignment for the daily check will be made, and tags or some similar device will be used to inform other operators that the check has been made.

(3) Machine or arc welding equipment and operations will conform to the National Electrical Safety Code and OSHA Standards 1910.252. Frames of electrically driven welding machines, portable or stationary, will be positively grounded, and the ground connections protected from mechanical injury by guards designed to permit easy visual inspection and testing of all exposed portions of the grounding system. Testing for continuity of the grounding system will be done every 30 days.

c. Storage of Hot Work Equipment. Hot work equipment may be stored in the building where used if definite storage areas are clearly designated and portable equipment is returned to these areas at the close of each day's work. Supervisory personnel will institute a system for a preclosing inspection of the area to insure closure of all supply valves. Working supplies of oxidizing and flammable gases may be stored together in these areas.

d. Hot Work on Containers for Flammable Liquids. No welding or cutting or other work involving use of heat or generation of sparks will be done on containers that have held a flammable substance, either by shop personnel or by troops in the field, until the rules in e, below have been fully complied with.

e. Cleaning flammable containers.

(1) The barrel, drum, or tank will be thoroughly purged of flammable solids, liquids, vapors, or of any substance that will produce toxic vapors when heated, in the following manner:

(a) Emptying or cleaning of vessels will be done in the open in a location where the vapors will be safely dispersed, or in a building designed, equipped, and approved for operations involving contamination of the atmosphere with flammable gases and vapors.

(b) The vessel will be cleaned by filling it with a hot solution consisting of 6 ounces of trisodium phosphate or sodium silicate per gallon of water. Where steam is available, it will be bubbled through the solution to heat it. In any case, the solution will be used as hot as safety in handling permits. The solution in the vessel will be thoroughly agitated, either by stirring, steaming or shaking for a minimum of 30 minutes. The vessel will then be rinsed at least twice with clear water to prevent corrosion by the cleaning solution.

(c) After thorough cleansing and before commencing any hot work, the vessel will be filled with water and placed in a position where the water level can be maintained within a few inches of the point where the work is to be done, care being taken to provide a vent for escape of heated air or steam. Where it is not practicable to use water, carbon dioxide will be used to fill the vessel. Each pound CO₂ produces approximately 8 cubic feet of gas.

(2) Under no circumstances will engine exhaust gas be used for neutralizing flammable liquid containers before doing hot work. Carbon monoxide is not an inert gas and ignition by hot carbon particles is highly probable.

(3) Hot work on vessels that have contained leaded gasoline or other toxic materials will be done only in locations having positive ventilation sufficient to conduct any possible fumes away from the workers and to a point of safe dispersal.

f. Investigation of Fires. Manufacturers of welding and grass cutting equipment have incorporated in their design all elements necessary for mechanically safe devices and, as a result, fires and accidents from mechanical failure are so rare that investigations of fires and accidents will be conducted on the premise that the most likely cause is misuse of equipment.

8-13. CLEANING FLOORS.

a. The use of flammable solvents for cleaning floors is prohibited. Prohibited materials include gasoline, naphtha, Stoddard solvent, Varsol, and all other materials in these classes.

b. Supervisory personnel at all levels will be responsible for violations by subordinates.

c. All-purpose detergent and water will ordinarily be used for cleaning. Where heavy grease or oil cannot be removed by this method, a cleaning solution consisting of 1/4 pound of sodium hexametaphosphate and 2 ounces of general purpose detergent to 1 gallon of water may be used. Application is by mop. The solution is allowed to stand on the floor for at least 3 minutes and then mopped up. Scrubbing with a stiff brush may be necessary

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for heavy deposits. The solution will attack painted surfaces, but other than protecting such areas, may be used in the same manner as ordinary detergents. Sodium hexametaphosphate (Graham Salt FSN 6810-240-2124) is available in 100 pound bags.

d. Absorbent type cleaners, such as Drizit, consisting of inert materials, may be used. Sawdust is not an acceptable substitute.

e. Wiping towels, cloth, or paper will not be laundered or cleaned by shop personnel for reuse by dipping or rinsing in any type petroleum base solvent or in washing machines not approved for use with flammable cleaning agents. Any conflicting directions for use packaged with or furnished with the towels will be disregarded. This regulation applies to paint rags, grease rags, sponges, cotton waste, or any material used for removal of excess or waste flammable substances.

CHAPTER 9

WAREHOUSE AND STOREROOM FIRE REGULATION

9-1. **APPLICABILITY.** This chapter applies to all storage activities on the installation, except in private quarters. All warehouses, company storerooms, storage facilities in bachelor quarters, post exchange storerooms, and utility storage rooms in clubs.

9-2. **REGULATIONS.** All current warehouse regulations, including TM 743-200, will be observed. No deviation from the requirements for clearance between stacks and sprinkler equipment will be permitted. Also paragraphs 4-8c(6) and (7) of FORSCOM Regulation 420-24 will be observed and adhered to.

9-3. **RESPONSIBILITY.**

a. Warehouse supervisors are responsible for determining the degree of hazard associated with material to be stored, possible hazards developed from mixed storage of low hazard material and arranging for storage of high hazard and high value items in buildings having maximum automatic protection.

b. Where warehouse supervisors are not involved, the person accountable for Government property is responsible for compliance with this regulation. Where no Government property is involved, the person having overall responsibility for the operation in the building is responsible.

9-4. **HAZARD CLASSIFICATION OF MATERIALS.** For guidance, fire risks are classified as follows:

a. Hazardous materials which, either by themselves or in combination with their packaging, are highly susceptible to ignition and will add fuel to the intensity of rapid spread of the fire.

b. Moderately hazardous materials and their packaging, either of which will contribute fuel to the fire.

c. Low hazard materials which in themselves will not normally ignite but which, in combinations with their packaging will contribute fuel to the fire.

d. Noncombustible materials and their packaging which will neither ignite nor support combustion.

e. All storage areas will be identified by their hazard according to NFPA No. 704.

9-5. **SPECIAL STORAGE.**

a. Materials subject to spontaneous heating will be warehoused with special precautions. Wood fiberboards, plastics, and canvas products, including tentage and camouflage nets, have ignited spontaneously when stored immediately after exposure to hot sunlight or removal from sealed cars in hot weather. Preventive measures during this danger period will include:

(1) Palletization to allow maximum air circulation around each bundle or case and to permit close surveillance for detection of heat generations. Tiered palletization is recommended.

(2) Maximum possible ventilation of the storage area.

(3) Twenty-four hour surveillance when any degree of spontaneous heating occurs.

b. Materials subject to damage by radar emission, such as photoflash bulbs, will be stored according to DA TB SIG 217.

c. Compressed gas cylinders.

(1) Compressed gas cylinders, full or empty, will be stored according to AR 700-68, Compressed Gases and Gas Cylinders, and FM 385-1-1, General Safety Requirements, OCE, and OSHA Standards 1910.252. Storage areas may be located in shops for working supplies of gases. Areas selected will be easily accessible for fire fighting operations.

(2) Cylinders in the storage area will be secured by one of the following methods to prevent overturning or rolling.

(a) On end in racks structurally sufficient, including means for closing the loading site, to prevent overturning. No section of the rack should contain over six cylinders.

(b) In unopened shipping pallets.

(c) On end, secured to a wall or other substantial support by noncombustible strapping.

(d) On their sides in cradles, or between chocks permanently affixed to the floor with the exception of acetylene cylinders which will be stored upright, valve end up.

(e) In carts or other devices designed for transport of the tanks. In cases involving working supplies, oxidizing and flammable gases need not be stored in separated areas.

(3) Cylinders will not be tested for contents by opening "cracking" the valve. The only permissible method of determining whether a cylinder is full, partially full, or empty is by weighing.

d. Containers which have contained flammable liquids will be stored and handled according to the requirements for filled containers. Containers will be kept tightly closed.

e. Acids, oxidizing materials, and other dangerous chemicals will be stored according to TM 3-250.

9-6. ACCESS TO BUILDINGS AND EQUIPMENT.

a. Any warehouse door blocked by storage will be marked on the outside by a securely affixed sign "BLOCKED". Letters will be red, 4 inches high, on a white background.

b. Where fire extinguisher locations, manual fire alarm boxes and control valve locations are not visible from the center aisle, directional signs with 6 inch letters on a red background will be erected at appropriate locations. When necessary to block access aisles to this equipment, the Fire Marshal will be notified and equipment relocated if possible.

9-7. REPORTS OF SPECIAL HAZARDS. The Fire Department will be notified immediately on receipt of unusually large quantities of hazardous materials or of any unusual shipments (Exempt report, paragraph 7-20, AR 335-15, Management Information Control System).

9-8. MATERIALS HANDLING EQUIPMENT.

a. Forklifts and other gasoline powered equipment will not be fueled in the warehouse, but may be fueled on the dock at locations of 25 feet or more from any opening to the building or 50 feet or more from any stock or dunnage stacked on the dock.

b. Gasoline powered equipment may be stored in the warehouse provided the location is approved by the Fire Marshal and adequate drip pans and other means are provided to prevent grease accumulations on the floor.

9-9. STORAGE AND DISPLAY OF PAINT.

a. Paint, varnish, lacquer, enamel, shellac, and thinners bearing the ICC Red Label, or designated as flammable in the descriptive matter on the container, will be stored according to TM 743-200-1. Floor area and stacks will not exceed 2,000 square feet, and clearance between the stacks and all walls will be 24 inches (TM 743-200-1). When displayed for sale, as in self-service centers and exchanges, containers with capacities of 1 gallon or more will bear the ICC Red Label. Displays of flammables in ICC containers of less than 1 gallon capacity will include a sign (1 inch letters) warning purchaser of the flammable nature of the contents. Display will be kept a safe distance from corrosive or oxidizing materials. Storage and display stacks will be palletized or otherwise arranged to allow prompt detection and removal of leakers.

b. Water type paints in unopened containers are not serious fire hazards and may be stored in general purpose warehouses according to regulations covering storage of materials of moderate combustibility, except that palletization is required.

9-10. OUTSIDE STORAGE

a. Storage on unroofed docks is permitted, provided no doors necessary for Fire Department access to the building are blocked and no part of the storage is within 20 feet of a fire wall separating sections of frame or noncombustible buildings.

b. Storage is not permitted on covered docks, unless sprinkler protection is provided and operable under the roof. Storage on sprinklered covered docks will be as in a, above.

c. Storage stacks or structures, and clearances between stacks, covered or uncovered, and buildings will be according to the clearances required between buildings by TM 5-812-1: the intent of this requirement is to allow no encroachment on the required fire separations between buildings. Stack sizes and clearances between stacks will be according to TM 743-200 and 743-200-1.

d. Location of outside storage areas is subject to the approval of the Fire Marshal.

e. Vehicles in storage will be spaced not less than 20 feet from any building.

CHAPTER 10

PLACES OF PUBLIC ASSEMBLY FIRE REGULATIONS

10-1. **APPLICABILITY.** This chapter applies to any building or part of a building used for public, restricted or private gatherings of 100 or more persons. When more than 50 per cent of the floor space of a building, including kitchens, bars, offices, and similar service or associated facilities is used for assembly, this chapter applies to the entire building.

10-2. **DECORATIONS.** Curtains, drapes, wall and ceiling finishes (including wallpaper), seasonal decorations, such as Christmas trees, and any other material for enhancing the appearance of the building will be noncombustible or flameproofed, with the following exceptions.

a. When the total of any one area covered does not exceed 25 square feet, the adjacent wall or ceiling is noncombustible, and the area is separated from other light combustible material by a space of 3 feet or more horizontally and 10 feet or more vertically.

b. When used in buildings protected by automatic sprinkler systems and the ceiling portion is so arranged that horizontal travel is limited to 10 feet in any direction by clear spaces of 5 feet or more, centered on the sprinkler system branch lines.

c. Christmas trees, when used between 20 December and 31 December, and when freshly cut butt is resting in a container of not less than 1 gallon capacity, not less than half full of water, and the tree is firmly supported.

10-3. **EXITS.**

a. Exits will be provided according to NFPA Regulation No. 101 and OSHA Standards 1910.36 and 1910.37.

b. Clear aisles with a minimum width of 4 feet will be provided to each exit from the area it serves. Aisles will be so arranged that travel from any point in the building in any direction to an aisle is not more than 20 feet. Movable equipment, such as tables and other furniture, will be located or secured so that overturning will not block any aisle.

10-4. **FIRE PLANS AND ALARMS.**

a. The person in charge of the activities in a place of assembly will prepare a fire plan for the building, and be specifically charged with the following responsibilities:

(1) Designation of an alternate so that he/she or his/her alternate will be present at all times the building is in use.

(2) Organizing and training all employees and attendants in their duties for prevention of panic in event of fire. Temporary or one-time personnel are not excepted.

b. Immediately upon discovery or suspicion of fire by an employee, the person in charge will be notified and an alarm transmitted to the Fire Department. Under no circumstances will there be any shouting or yelling "fire".

c. As soon as the fire alarm has been sent in, or during that period, the person in charge will:

(1) By prearranged signal, order all personnel to their emergency stations where they will:

(a) Open all exits.

(b) Stand by to insure orderly passage through them.

(c) Turn on all available lights.

(2) Stop any performance, such as a show or a band, announce that there is a fire, and direct clearing of the house. Panic must be avoided at all costs; the person announcing the fire must show no excitement and exhibit complete self-control; and the employees must execute their assignments calmly and efficiently.

10-5. SPECIAL OCCUPANCIES.

a. Bowling Alleys.

- (1) Will not be waxed, polished, sanded, or varnished during operating hours.
- (2) Mops, rags, waxes, and varnish containers will be removed prior to opening.
- (3) Smoking in or around the pits is prohibited.
- (4) Refinishing or reconditioning of pins is prohibited unless complete facilities are provided, including dust removal system and spray paint booth, and the working area is segregated by adequate fire separation.
- (5) Only nonflammable, nontoxic fluids will be used for cleaning balls and pins or for spot cleaning of alleys.
- (6) During alley cleaning or refinishing or any other period when flammable volatiles or materials containing flammable volatiles are used in quantities in excess of 1 gallon per hour, all electrical devices within 1'6" of the floor in all parts of the building will be positively de-energized until tests with an explosimeter or similar device show the area is free of flammable vapor. This will preclude the use of sanders or buffers during or immediately after the finish is applied. During this period, air-conditioning and heating systems will be shut down. Maximum natural ventilation will be provided. If available, smoke exhausters of a type approved for use in Class I, Division I atmospheres may be used to speed up ventilation.

b. Theaters, including all occupancies darkened for projection of pictures.

- (1) In the event of a film fire in the projection booth during the time the theater is occupied, the projectionist will immediately signal for evacuation of the theater prior to attempting to extinguish the fire. In no case will attempts be made to extinguish a fire in the booth unless a second person is stationed immediately outside the booth.
- (2) Before each performance, all exit lights, exit passage lighting, emergency house lighting, and all exit doors will be checked for proper operation. The public will not be admitted until all necessary corrections have been made.
- (3) Before each performance, the projection and observation port members will be checked for operation (may be omitted if closing procedures include release and dropping of the shutters).
- (4) Aisles and exit passages through the foyer will be kept clear of standees. Standees will be permitted only in areas approved by the Fire Marshal, and when these areas are filled no more patrons will be permitted in the auditorium.
- (5) Smoking is prohibited in the theater auditorium and in the foyer. "NO SMOKING" signs will be posted.
- (6) Trash and waste materials will be placed in covered cans to be provided for the purpose. These cans will be emptied as often as necessary during performances and will be emptied or removed from the building before closing.
- (7) An inspection of the entire building will be made and recorded after the final performance and before closing for the night.
- (8) All theater personnel will be thoroughly familiar with TM 28-410.
- (9) When theaters are used for other than theatrical presentations, the user or using agency is responsible for compliance with and enforcement of all regulations above concerned with the safety of the occupants and protection of the property during such periods of use. Theater officers, when authorizing use of the buildings, will insure that the responsibility is assigned to a specific individual physically given or has access to detailed instructions covering the extent of his responsibilities.

c. Clubs and Dayrooms.

- (1) Installation of any type material which becomes an integral part of the building, such as floor coverings, wall or ceiling paneling, and other work intended to enhance the appearance of the facility, will not be undertaken until the Fire Marshal has approved the material and method of installation.

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(2) A complete after-closing inspection will be made and reported by a responsible person. The inspection will include:

(a) Examination of all overstuffed furniture for smoking material. Loose cushions should be removed and not replaced until opening time (may be omitted where upholstery covering materials are noncombustible).

(b) Examination of soiled linen hampers.

(c) Check of storerooms and areas where trash accumulates.

(d) Check of bowls, urns, flower boxes, and other places where smoking material may have been discarded.

(e) Check of radios, television, etc., record players, and other electrical devices to insure disconnection.

CHAPTER 11

PLACES OF DETENTION OR CONFINEMENT FIRE REGULATIONS

11-1. **APPLICABILITY.** This chapter applies to any building where any occupant is in any way prevented by physical or mechanical means from leaving at will at any time. Confinement facilities, neuropsychopathic wards, and hospital prison wards are included.

11-2. **FIRE AND EVACUATION PLANS.**

a. Plans for evacuation of each confinement building will be prepared by the Confinement Officer or the person in command of the activity, as applicable. These plans will:

- (1) Detail the action of each person on duty.
- (2) Designate alternates and establish supervision to insure completion of the action.
- (3) Provide for automatic transfer of functions in the event of incapacitation or absence.
- (4) Set up emergency stations for receiving reports as elements of the plan are completed.

b. Fire drills will be conducted weekly and duty personnel will be quizzed at the beginning of each tour on their assigned functions in the event of a fire.

11-3. **ATTENDANTS OR GUARDS.**

a. Confinement areas or rooms will be under the constant surveillance of an attendant posted in the room or corridor on which the door to such areas or rooms open. The attendant will be prepared and able, in the event of a fire, to release the prisoners or patients under his care and will not leave his post for any reason unless properly relieved.

b. In addition to the attendants required for complying with a, above, at least one other person will be present in duty status and will have in his possession a list of all persons under confinement and the guards or attendants on duty, their location in the building, and in the event of fire, will check according to prearranged plans with each attendant to insure evacuation of prisoners.

c. Untrained personnel will be assigned stations of responsibility only under suitable direct supervision.

11-4. **FIRE ALARM FACILITIES.**

a. A manually operated alarm system, audible in all portions of the building, and at least one point from which aid can be expected, will be provided. This alarm, will be sounded only in case of fire and for fire drills.

b. A manually operated, coded fire alarm box will be provided where connection to the central station alarm system is possible; otherwise, a fire reporting telephone will be installed. The alarm will be located where personnel are on duty at all times, such as the confinement facility office. The alarm will be tested daily at a fixed time by duty personnel according to procedures set up by the Fire Marshal.

11-5. **FIRE PREVENTION.**

a. Under no circumstances will flammable liquids be permitted or used in any building used for confinement during periods when personnel are confined to the building.

b. A daily check will be made of automatic sprinkler systems for signs of tampering or damage.

CHAPTER 12

NURSERY FIRE REGULATIONS

12-1. SCOPE. This chapter applies to buildings or areas for care and housing of infants or children in a public place for periods of 12 hours or less, including kindergarten and day schools for children under 6 years of age.

12-2. RESPONSIBILITY. When a nursery is operated as an independent activity, the person in charge of the activity is responsible for observance and enforcement of these regulations. When the nursery is operated in connection with a club or similar activity, the person in charge of the sponsoring activity is responsible.

12-3. LOCATION AND ARRANGEMENT OF NURSERY AREAS. In all cases, nursery areas will:

a. be located on the ground floor, except in fire resistive buildings, or when specifically approved by the Fire Marshal, on the second floor or combustible buildings protected by automatic sprinklers.

b. be segregated from the remainder of the building by partitions of not less than 1 hour construction; any communicating doors through these walls will be Class C with automatic closers.

c. be so arranged that all portions are visible to attendants at all times.

d. Have a minimum of two exits, one of which must be directly to the outside of the building and arranged so that cribs can be rolled through it without necessity for lifting or other means to pass obstructions.

e. Have cribs and beds in rows of not more than two, separated by an aisle not less than 3 feet wide. Cribs and beds will be in a location having unobstructed access to the exit leading directly outside.

12-4. FIRE PREVENTION.

a. No open flame heaters or cooking equipment will be permitted in the nursery area. Bottle warmers and other devices necessary for infant feeding will be of an approved electrical type.

b. Smoking is prohibited throughout the nursery area.

c. Visitors are prohibited, other than mothers at feeding time and persons on official business.

12-5. FIRE ALARM FACILITIES. Fire alarm facilities will consist of:

a. An administrative telephone and, in buildings having automatic sprinkler or fire alarm protection, a manual fire alarm box.

b. A fire warning signal, consisting of flashing red lights, operated from two manual actuating stations at locations elsewhere in the building and selected by the Fire Marshal. In buildings having automatic sprinklers, an automatic (pressure) switch will be connected to the automatic sprinkler alarm line at the third actuating station.

12-6. EVACUATION PLAN. The nursery evacuation plan will insure the following:

a. The attendants know at all times the exact number of children in the nursery and are prepared to account for the total number in event of emergency evacuation.

b. Sufficient attendants are on hand to evacuate the nursery in not more than three minutes. The Fire Marshal will determine the number of attendants required in ratio to the number of children, and this number will not be reduced at any time.

c. Maximum use can be made of facilities for movement of the children. Several children can be placed in a crib equipped with wheels and moved by the attendant.

d. Evacuation routes are adequate for movement of the children.

e. Entry of unauthorized persons during emergencies is prevented.

CHAPTER 13

LAUNDRIES AND DRY CLEANING PLANTS

13-1. SCOPE. This chapter applies to all laundries, dry cleaning plants, and pressing shops using spotting equipment. TM 10-17 also applies. All laundry and cleaning plant employees in supervisory grades are required to be thoroughly familiar with this regulation.

13-2. HOUSEKEEPING.

a. Work areas will be kept reasonably clean at all times and clothing in process will be kept out of aisles, unless in baskets. In no case will clothing be piled where it can fall against hot pipes, heaters, drive belts, or motors.

b. Lint collecting systems and dryer exhausts will be kept free of any accumulations tending to clog or reduce the area of the ducts. Lint collectors will be thoroughly cleaned when filled to two-thirds capacity.

c. Lint will be cleaned from building members and sprinkler piping once each week.

13-3. DRY CLEANING EQUIPMENT. Dry cleaning equipment, and its installation, will be according to the current issue of NFPA Pamphlet No. 32. Dryer exhausts and lint removal systems will be according to the current issue of NFPA Pamphlet No. 91.

13-4. FIRE PLANS. Fire plans will include procedures for plant personnel shutting down all steam, fuel and air lines, and all electrical equipment.

13-5. STORAGE. Garments should never be left in tumblers overnight. Articles removed from tumblers will not be folded and stacked in trucks or baskets until allowed to cool. When a plant is shut down for the day, tumblers should be unloaded. If the load is hot, it should be spread out and aired. Articles removed from the tumblers may be placed in baskets and remain overnight if the articles have been cooled sufficiently so that there is no danger of fire.

13-6. GROUNDING OF EQUIPMENT. Laundry superintendents will make periodic inspections of all equipment where grounding is required, and will make annual tests to determine the continuity of bonding and the effectiveness of the ground. Dates of tests, deficiencies found, action for correction, and date of correction will be recorded; the building inspection record (FH Form 2195) may be used for this purpose (3-13, above).

CHAPTER 14

FIRE REGULATIONS FOR AFTER-HOURS PERSONNEL

14-1. SCOPE. This chapter applies to all custodial personnel, guards, watchmen, and others whose duty tours or parts of such tours occur outside normal working hours. It also applies to cleaning crews in clubs and similar occupancies when the operation is conducted before or after normal operating hours.

14-2. RESPONSIBILITY. Conduct of instruction and training is the duty of the supervisor, who may request assistance from the Fire Department in preparing his training program. In all cases where personnel work in a building outside normal working hours, the individual arranging for or providing this service will insure that responsibility for the operation is definitely assigned; in the event a definite assignment is not made, the individual arranging for or providing the service is responsible for any incidents which may occur.

14-3. TRAINING. Supervisors will insure that each person under this supervision is:

a. Thoroughly instructed and trained in methods and facilities for turning in alarms of fire. Practice alarms may be turned in when prior approval of the Fire Chief has been secured.

b. Instructed and trained in the use of first aid extinguishing equipped.

c. Instructed on action to be taken upon sounding of any alarm or warning device, i.e., water flow alarm gongs, low air pressure alarms, etc.

d. Instructed concerning potential danger spots in the building or buildings and required to check such locations upon entering and before leaving.

14-4. REPORTING OF VIOLATIONS. After-hours personnel will report to their supervisors any violations of regulations found by them (Exempt Report, paragraph 7-20, AR 335-15). The supervisor will report these violations, either by telephone or penciled memorandum, directly to the Fire Marshal. These will include but not be limited to:

a. Unextinguished smoking material.

b. Electrical appliances left in operation.

c. Fire doors left open.

d. Open or partly closed containers for hazardous materials.

CHAPTER 15

STORAGE OF EQUIPMENT USING FLAMMABLE FUELS

15-1. PURPOSE. This chapter outlines basic precautions for the fire safe storage of gasoline powered equipment and devices.

15-2. GENERAL.

a. Included are gasoline powered vehicles of all types, gasoline driven generators, pumps and all similar devices using integral liquid fuel powered drive units, and any device using any flammable liquid as fuel for production of heat or light, including field range fire units, immersion heaters and similar devices, when the fuel tank is an integral part of the unit. Storage, as used herein, covers any period of time during which the equipment is inside a building or not being used, handled, transported, or serviced outdoors.

b. The primary hazard involved in storage of vehicles and devices of this type, in addition to leakage, is the generation and escape of flammable vapor from the fuel tanks, frequently accelerated by the higher ambient temperature inside the building. These vapors form explosive or easily ignitable mixtures with air and travel long distances.

c. Other than recognizing the tendency of the vapor to flow to the lowest level and collect in such low areas, there is no practical method of determining the direction of flow or points where explosive mixtures may develop. Drafts induced by open doors, heating equipment, air moving equipment, and wind may move the vapor in any direction. Since the path of vapor travel cannot be accurately predicted, all parts of the building at or below the level of the storage will be considered a hazardous area - unless in the opinion of the Fire Marshal, the quantity and arrangement of the storage is such that this classification is unnecessary.

15-3. VEHICLE STORAGE OR PARKING.

a. Vehicles in the cantonment area will be stored or parked only where the exhaust parts are clear of any combustible materials, such as grass, brush, fuel spills, etc., and where all combustible vehicle parts are clear of possible contact with ignition sources.

b. Ashtrays and other receptacles for smoking materials will not be used for disposal of combustibles, i.e., candy wrappers, cigarette packages, etc. Before parking in the motor pool or turning into a shop, ashtrays will be emptied. Containers for safe disposal of this debris will be provided by the individual responsible for the building or area.

c. Vehicles will be parked in motor pools so they will not inhibit easy access of fire fighting equipment and a minimum of 10 feet from any building.

15-4. OUTDOOR STORAGE. Outdoor storage or storage under sheds opening on two or more sides presents no problem of vapor accumulation since it is rapidly diluted by air to a level where it is no longer explosive. Normal precautions in handling the equipment and control of ignition sources in the immediate vicinity will provide adequate prevention of fire.

15-5. PRECAUTIONS REQUIRED FOR INDOOR STORAGE.

a. Storage in buildings other than garages, flammable liquid warehouses, motor repair shops, and other buildings specifically designed and designated for such occupancy is prohibited, unless excepted below or elsewhere in this regulation and specifically approved by the Fire Marshal.

b. Where operational requirements or lack of facilities preclude storage as in a above, the following precautions are mandatory:

(1) A storage area will be selected that will allow a minimum of 10 feet separation between the devices and any other storage in the same room.

(2) Wherever possible, natural ventilation will be provided which will allow a flow of air at floor level across the storage area to the exterior of the building.

(3) All electrical equipment within 18 inches of the floor, if not approved for use in all Class I, Group 2 Locations will be positively de-energized either at the panel or by disconnecting and removing the receptacle.

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(4) The building will be carefully surveyed to eliminate any source of ignition within 18 inches of the floor in areas subject to permeation by the vapors. Any open flame devices, such as water heaters, space heaters, etc., will be disconnected and the fuel supply line capped.

(5) All fuel tank fill caps will be in place and tight. This will not prevent escape of vapors via overflow lines provided in some types of tanks.

(6) Where provided, valves in fuel lines to carburetors or burners will be closed.

(7) Unless emergency requirements exist, fuel tanks will not be filled immediately prior to indoor storage.

(8) Storage will be arranged, including racks or barriers, if required, to preclude possible mechanical damage to the equipment from outside sources, or by falling overturning, or dislodging the equipment.

(9) Smoking, without exception, will be prohibited through-out the area.

(10) Equipment will not be fueled, defueled, or operated inside the building. Operation includes handcranking or any other operation of the motor.

(11) Where storage is, or may be, for periods longer than overnight or over weekends, batteries, if any, will be disconnected and the cables secured to prevent accidental contact with the battery terminals.

(12) Draining of fuel tanks prior to short-term storage is not required, nor will draining be considered grounds for waiver of any of the precautions herein, unless the tank is completely purged according to 8-12e, above.

(13) Inspections of the area will be scheduled for the last hour of the working day to insure compliance with the above requirements and to insure prompt detection of any leaks. Equipment developing minor leaks will be immediately removed from the building to a safe outdoor location, and the building will be thoroughly ventilated. In the event of a large leak, evacuation will be performed only under supervision of the Fire Department. The daily inspection will be made by a responsible noncommissioned officer and recorded on the building inspection record.

The proponent of this regulation is the Directorate of Facilities Engineering. Users are invited to send comments and suggested improvements to the Commander, III Corps and Fort Hood, ATTN: AFZF-FE-FPP.

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